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LEE'S

LITTLE GOLD MINE

AND

HANDY ATLAS.

IMPORTANT FACTS—HISTORICAL, POLITICAL, STATISTICAL AND GEOGRAPHICAL. GENERAL INFORMATION ON THOUSANDS OF SUBJECTS OF INTEREST TO EVERYONE. WAR HISTORY, SPORTING RECORDS UP TO DATE, POPULATION, EXCESS BAGGAGE CHARGES, SIMPLE AND COMPOUND INTEREST, ETC., ETC., SEE THE INDEX.

ILLUSTRATED.

51 FULL PAGE MAPS.

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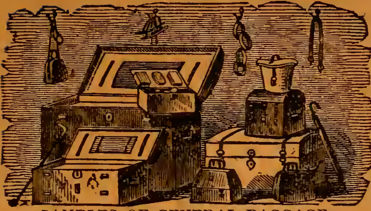
EXCESS BAGGAGE CHARGES.



SAMPLES OF GENERAL BAGGAGE.

Bicycles and baby carriages are not carried free on western roads, but are charged for as 50 pounds of excess baggage—whether passenger has other baggage or not.

Allowed free **150** pounds for each passenger holding full tickets, **75** pounds each half ticket.

To find excess baggage rate to any point. first ascertain the *lowest* first-class unlimited ticket rate to that point. Then find that rate in the table below, under the head of "Fares," and opposite such rate you will find the rate per **100** pounds. In computing charges for less than **100** pounds. multiply the number of pounds by the rate so given, divide by **100**, and you have the amount to be collected.

Thus, suppose the excess of baggage is **45** pounds and suppose the cost of ticket is **$50.01**, in which case the rate per **100** pounds would be **$6.05**. (See table.) To ascertain the cost of transporting the **45** pounds of excess, we multiply the **$6.05** by **45** and the result is **27225**; divide by **100**, cutting off two righthand figures, we have **272** cents, or **$2.72**.

In computing charges, all weights and rates must end in **0** or **5**. and in no case must a less amount than **25** cents be charged for any shipment. In the above the baggage-master would probably make the sum **$2.70**.

Rates based on 12 per cent. of fare.

FARES.	Charge for 100 Pounds.	FARES.	Charge for 100 Pounds.	FARES.	Charge for 100 Pounds.
7.51 to 7.95	95	12.51 to 12.95	1.55	17.51 to 17.95	2.15
7.96 " 8.35	1.00	12.96 " 13.35	1.60	17.96 " 18.35	2.20
8.36 " 8.75	1.05	13.36 " 13.75	1.65	18.36 " 18 75	2.25
8.76 " 9.20	1.10	13.76 " 14.20	1.70	18.76 " 19.20	2.30
9.21 " 9.60	1.15	14.21 " 14.60	1.75	19.21 " 19.60	2.35
9.61 " 10.00	1.20	14.61 " 15.00	1.80	19.61 " 20.00	2.40
10.01 " 10.45	1.25	15.01 " 15.45	1.85	20.01 " 20.45	2.45
10.46 " 10.85	1.30	15.46 " 15.85	1.90	20.46 " 20.85	2.50
10.86 " 11.25	1.35	15.86 " 16.25	1.95	20.86 " 21.25	2.55
11.26 " 11.70	1.40	16.26 " 16.70	2.00	21.26 " 21.70	2.60
11.71 " 12.10	1.45	16.71 " 17.10	2.05	21.71 " 22.10	2.65
12.11 " 12.50	1.50	17.11 " 17.50	2.10	22.11 " 22.50	2.70

EXCESS BAGGAGE CHARGES.—(Continued.)

FARES.	Charge for 100 Pounds.	FARES.	Charge for 100 Pounds.	FARES.	Charge for 100 Pounds.
22.51 to 22.95	2.75	42.96 to 43.35	5.20	63.36 to 63.75	7.65
22.96 " 23.35	2.80	43.36 " 43.75	5.25	63.76 " 64.20	7.70
23.36 " 23.75	2.85	43.76 " 44.20	5.30	64.21 " 64 60	7.75
23.76 " 24.20	2.90	44.21 " 44.60	5.35	64.61 " 65.00	7.80
24.21 " 24.60	2.95	44.61 " 45.00	5.40	65.01 " 65.45	7.85
24.61 " 25.00	3.00	45.01 " 45.45	5.45	65.46 " 65.85	7.90
25.01 " 25.45	3.05	45.46 " 45.85	5.50	65.86 " 66.25	7.95
25.46 " 25.85	3.10	45.86 " 46.25	5.55	66.26 " 66.70	8.00
25.86 " 26.25	3.15	46.26 " 46.70	5.60	66.71 " 67.10	8.05
26.26 " 26.70	3.20	46.71 " 47.10	5.65	67.11 " 67.50	8.10
26.71 " 27.10	3.25	47.11 " 47.50	5.70	67.51 " 67.95	8.15
27.11 " 27.50	3.30	47.51 " 47.95	5.75	67.96 " 68.35	8.20
27.51 " 27.95	3.35	47.96 " 48.35	5.80	68.36 " 68.75	8.25
27.96 " 28.35	3.40	48.36 " 48.75	5.85	68.76 " 69.20	8.80
28.36 " 28.75	3.45	48.76 " 49.20	5.90	69.21 " 69.60	8.35
28.76 " 29.20	3.50	49.21 " 49.60	5.95	69.61 " 70.00	8.40
29.21 " 29.60	3.55	49.61 " 50.00	6.00	70.01 " 70.45	8.45
29.61 " 30.00	3.60	50.01 " 50.45	6.05	70.46 " 70.85	8.50
30.01 " 30.45	3.65	50.46 " 50.85	6.10	70.86 " 71.25	8.55
30.46 " 30.85	3.70	50.86 " 51.25	6.15	71.26 " 71.70	8.60
30.86 " 31.25	3.75	51.26 " 51.70	6.20	71.71 " 72.10	8.65
31.26 " 31.70	3.80	51.71 " 52,10	6.25	72.11 " 72.50	8.70
31.71 " 32.10	3.85	52.11 " 52.50	6.30	72.51 " 72.95	8.75
32.11 " 32.50	3.90	52.51 " 52.95	6.45	72.96 " 73.35	8.80
32.51 " 32.95	3.95	52.96 " 53.35	6.40	73.36 " 73.75	8.85
32.96 " 33.35	4.00	53.36 " 53.75	6.45	73.76 " 74.20	8.90
33.36 " 33.75	4.05	53.76 " 54.20	6.50	74.21 " 74.60	8.95
33.76 " 34.20	4.10	54.21 " 54.60	6.55	74.61 " 75.00	9.00
34.21 " 34.60	4.15	54.61 " 55.00	6.60	75.01 " 75.45	9.05
34.61 " 35.00	4.20	55.01 " 55.45	6.65	75.46 " 75.85	9.10
35.01 " 35.45	4.25	55.46 " 55.85	6.70	75.86 " 76 25	9.15
35.46 " 35.85	4.30	55.86 " 56.25	6.75	76.26 " 76.70	9.20
35.86 " 36.25	4.35	56.26 " 56.70	6.80	76.71 " 77.10	9.25
36.26 " 36.70	4.40	56.71 " 57.10	6.85	77.11 " 77.50	9.30
36.71 " 37.10	4.45	57.11 " 57.50	6.90	77.51 " 77.95	9.35
37.11 " 37.50	4.50	57.51 " 57.95	6.95	77.96 " 78.35	9.40
37.51 " 37.95	4.55	57.96 " 58.35	7.00	78.36 " 78.75	9.45
37.96 " 38.35	4.60	58.36 " 58.75	7.05	78.76 " 79.20	9.50
38.36 " 38.75	4.65	58.76 " 59.20	7.10	79.21 " 79.60	9.55
38.76 " 39.20	4.70	59.21 " 59.60	7.15	79.61 " 80.00	9.60
39.21 " 39.60	4.75	59.61 " 60.00	7.20	80.01 " 80.45	9.65
39.61 " 40.00	4.80	60.01 " 60.45	7.25	80.46 " 80.85	9.70
40.01 " 40.45	4.85	60.46 " 60.85	7.30	80.86 " 81.25	9.75
40.46 " 40.85	4.90	60.86 " 61.25	7.35	81.26 " 81.70	9.80
40.86 " 41.25	4.95	61.26 " 61.70	7.40	81.71 " 82.10	9.85
41.26 " 41.70	5.00	61.71 " 62.10	7.45	82.11 " 82.50	9.90
41.71 " 42.10	5.05	62.11 " 62.50	7.60	82.51 " 82.95	9.95
42.11 " 42.50	5.10	62.51 " 62.95	7.55	82.96 " 83.35	10.00
42.51 " 42.95	5.15	62.96 " 63.35	7.60	83.36 " 83.75	10 05

Margaret A. Cassidy

HOW TO BE BEAUTIFUL.

St. Joseph [illegible]

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FRECKLES.

Freckles can be removed, without the least injury to the most sensitive skin, by the application of powdered nitre and corn starch, in equal parts. Dip a fine cloth in glycerine, then in the powder, and apply it to the face with care. Powdered nitre and compound Talcum, used in the same manner, is just as good.

A FINE FRECKLE LOTION.

Ox Gall	6 ounces.
Camphor	1½ scruples.
Burned Alum	1½ scruples.
Borax	1 drachm.
Rock Salt	2 ounces.
Rock Candy	1 ounce.

RECIPES FOR THE COMPLEXION.

MILK OF ROSES.

Blanched Almonds	2 ounces.
Rosewater	12 ounces.
Rectified Spirits	3 ounces.
Windsor Soap White Wax Oil Almonds	2 drachms.
Oil of Bergamont	1 drachm.
Oil of Lavender	15 drops.
Attar of Roses	8 drops.

To prepare this compound, beat the almonds well, add rosewater for an emulsion; mix the soap, wax and oils together, rub the mixture in a mortar, and strain through fine muslin. A reliable druggist will prepare this recipe properly, if thought too difficult for home manufacture.

It is a fine wash for cooling the face, arms and neck, and is excellent for sunburn and freckles. The ordinary milk of roses sold often contains pearl-ash, tartar salt, and other ingredients which render it decidedly inferior to the foregoing recipe.

FRENCH MILK OF ROSES.

Rosewater	2½ pints.
Rosemary Water	½ pint.
Spirits of Roses	½ ounce.
Tincture Storax Tincture Benzoin	2 ounces.

This makes an excellent lotion for freckles.

MILK OF ALMONDS.

Pulv. Jordan Almonds (blanched).	4 ounces.
White Soap	2 drachms.

Rub these ingredients well together in a mortar, gradually adding one quart of rosewater, and strain through fine muslin. This may be used as an everyday cosmetic for washing, and is excellent for tan, sunburn and freckles.

GOWLAND'S LOTION.

Bichloride Mercury	1½ grains.
Emulsion Bitter Almonds	1 ounce.

This cosmetic softens the skin, and imparts a delicate tint. It is good for sun-blisters, dry, harsh skin, and black-heads. The bichloride of mercury is a poison, and the bottle should be kept out of the reach of children.

CREME DE L'ENCLOS.

Milk	4 ounces.
Lemon Juice	1 ounce.
Spirits of Wine	2 drachms.

Simmer the mixture over a slow fire until it begins to boil, skim off the scum, and, when cold, it is ready for use. This recipe is much used for sunburn and freckles.

ALMOND PASTE.

Pulv. Bitter Almonds	1 onnce.
Barley Flour	1 ounce.

Add enough honey to make a paste.

M'LORRISINE.

Pulv. Marshmellow Root	4 ounces.
Pulv. Starch	2 ounces.
Pulv. Orris Root	3 drachms.
Ess. Jasmine	20 drops.

Mix well, and sift through muslin.

This elegant compound is excellent for softening and whitening the skin, and will prevent chapping. It may be used on the most sensitive and delicate complexions without fear of injury, and is one of the best cosmetics made.

ROSE POWDER.

Sifted Starch	1 ounce.
Rose Pink	½ drachm.
Ess. Jasmine	10 drops.
Attar of Roses	3 drops.

This powder is better liked than rouge for imparting a delicate coloring to the skin, and, as it is perfectly harmless, it may be used as often as necessary.

COLD CREAM.

Spermaceti	10 drachms.
White Wax	10 drachms.
Prepared Lard	8 ounces.
Subcarb. Potash	15 grains.
Rosewater	4 ounces
Spirits of Wine	2 ounces.
Attar of Roses	10 drops.

RIVERS ON THE SURFACE OF THE GLOBE 1,000 MILES LONG AND OVER.

Name of River.	Miles.	Country in Which Located.	Where It Rises.	Where It Empties.
Amazon	3,944	Peru, Ecuador and Brazil	Andes Mountains	Atlantic Ocean.
Amoor	2,200	Eastern Asia	Irkutsk—Mongolia	Sea of Okhotsk.
Araguay	1,300	Brazil	Latitude, 19° S.	Amazon River.
Arkansas	2,170	Utah, Indian Ter. Colorado	Rocky Mountains	Mississippi River.
Brahmaputra	1,500	Asia	Upper Assam	Bay of Bengal.
Chingua	1,150	Brazil	Diamanti Mountains	Amazon River.
Colorado	2,000	Utah, Wyoming, California	Southeast Utah	Gulf of California.
Columbia	1,400	Oregon, Washington British North America	Rocky Mountains	Pacific Ocean.
Congo	1,700	Congo and Loango, Africa	Interior Africa	Atlantic Ocean.
Danube	1,750	Central Europe	Black Forest, Baden	Black Sea.
Dnieper	1,200	Russia	Government of Smolensk	Black Sea,
Euphrates	1,600	Western Asia	Armenia	Persian Gulf.
Ganges	1,557	Hindustan	Himalaya Mountains	Bay of Bengal.
Hoang-Ho	2,500	China	Thibet	Yellow Sea.
Indus	1,960	Asia	Mt. Kailas, Thibet	Arabian Sea.
Irrawaddy	1,200	Farther India	British Burmah	Bay of Bengal.
Irtish	2,200	North Asia	Altai Mountains	Obi River.
Japura	1,000	Brazil and Colombia	United States of Colombia	Amazon River.
Kama	1,200	Russia	Government of Viatka	Volga River.
Kiou-long kiang	1,200	Thibet, China, etc	Thibet	China Sea.
Kuskoguim	1,500	Alaska	Alaska	Pacific Ocean.
Kwickpak	1,800	Alaska	Rocky Mountains	Bering Strait.
Lena	2,500	Siberia	Near Irkutsk	Arctic Ocean.
Mackenzie	1,700	British North America	Great Slave Lake	Arctic Ocean.
Madeira	2,000	South America	Bolivia	Amazon River.
Mississippi	2,616	North America	Itaska Lake, Minnesota	Gulf of Mexico.
Missouri	3,096	United States	Rocky Mountains	Mississippi River.
Murray	1,000	Victoria, Australia	Warragong Mountains	Lake Victoria.

Muy Kuang	1,300	China	Thibet	China Sea.
Niger	2,300	Central Africa	Western Coast	Gulf of Berien.
Nile	3,500	Northeast Africa	Blue River and White River, Lat. 15° 34′ N., Long. 32° 30′ 58″ E.	Mediterranean Sea.
Obi	2,700	Asiatic Russia	Little Altai Mountains	Gulf of Obi.
Orange	1,000	South Africa	Near Lat. 29° S., Long. 30° E.	Atlantic Ocean.
Orinoco	1,500	Venezuela	Sierra de Parima	Atlantic Ocean.
Paraguay	1,800	Paraguay and Brazil	Matto Grosso, Brazil	Parana River.
Parana	1,860	Uruguay	Brazilian Mountains	LaPlatte River.
Pilcomago or Araguai	1,000	Bolivia and Paraguay	Bolivia	Paraguay River.
Platte (or Nebraska)	1,200	Wyoming and Colorado	Wind Mountains, Wyoming, Park Mountains, Colorado.	Missouri River.
Red River and Branches	2,100	Texas, Indian Territory, Arkansas, Louisiana	Northwestern Texas	Mississippi River.
Rio Grande	1,800	United States and Mexico	Rocky Mountains	Gulf of Mexico.
Rio Negro	1,200	Colombia and Venezuela	Colombia Hills	Amazon River.
Sayhalien	1,000	Manchuria	Mongolia	Sea of Okhotsk.
San Francisco	1,400	Brazil	Sierra Verctates	Atlantic Ocean
Saskatchewan	1,000	British North America	Rocky Mountains	Lake Winnipeg.
Senegal	1,000	Senegambia	Mount Cooro	Atlantic Ocean.
Shat-el-Arab	1,800	Persia	Euphrates and Tigris	Persian Gulf.
Tigris	1,150	Turkey and Persia	Armenian Mountains	Persian Gulf.
Tocatines	1,300	Brazil	Cordilleras Mountains	Para River.
Ucayali	1,200	Peru	Near Cuzco	Amazon River.
Ural	1,800	Russia	Government of Mensk	Caspian Sea.
Uruguay	1,020	Brazil and Uruguay	Santa Catherine, Brazil	Parana River.
Volga	2,400	Russia	Valdai Mountains	Caspian Sea.
Yang-tse-Kiang	2,500	China	East Thibet	Yellow Sea.
Yellowstone	1,000	Wyoming. Montana, Dakota	Yellowstone Lake, Wyoming	Missouri River.
Yenisei	2,300	Siberia	Mongolia	Arctic Ocean.
Yukon	1,850	Alaska	British Colombia	Pacific Ocean.
Zambesi	1,800	Eastern Africa	About Lat. 11° S. Long. 23° E.	Indian Ocean.

Is the Moon Inhabited?

From what is now known of the moon it is certain that if that body is inhabited it must be by beings organized very differently from the human race or any animals on the earth. The moon is without water and without atmosphere; and, owing to the fact that it revolves on its axis but once a month, so that the lunar days and nights are each nearly thirty times as long as our days and nights, the extremes of heat and cold range every month from 400 degrees Fahrenheit above zero to 300 below. In the midst of such conditions no form of animal or vegetable life known to this planet could possibly exist; and it is generally agreed among astronomers that the moon is utterly barren of life in any form.

The Largest Rivers in the World.

EUROPE.

Name.	Miles.
Volga, Russia	2,500
Danube	1,800
Rhine	840
Vistula	700

ASIA.

Name.	Miles.
Yeneisy and Selenga	3,580
Kiang	3,290
Hoang Ho	3,040
Amoor	2,500
Euphrates	1,900
Ganges	1,850
Tigris	1,160

AFRICA.

Name.	Miles.
Nile	3,240
Niger	2,400
Gambia	1,000

SOUTH AMERICA.

Name.	Miles.
Amazon and Beni	4,000
Platte	2,700
Rio Madeira	2,300
Rio Negro	1,650
Orinoco	1,600
Uruguay	1,100
Magdalena	900

NORTH AMERICA.

Name.	Miles.
Mississippi and Missouri	4,300
Mackenzie	2,800
Rio Bravo	2,300
Arkansas	2,070
Red River	1,520
Ohio and Allegheny	1,480
St. Lawrence	1,450

The Nathan Murder.

The murder of Benjamin Nathan, a wealthy New York citizen, took place July 29, 1870. The unfortunate man was killed in his own chamber, and although the utmost silence reigned all night, and the windows of his room were open, no warning was conveyed to the watchman near by; even the members of the deceased's household, some of whom slept in an adjoining room, were not awakened. The scene of the homicide presented an appalling appearance, everything bore evidence of a fierce struggle; the room was stained in many places with blood, and there were nine frightful wounds upon the head and face of the murdered man. There hung over the case a vail of mystery which has only deepened with the years, and which the heaviest rewards have not in the slightest degree served to lighten. The Mayor of New York offered a reward of $30,000 for the arrest and conviction of the criminals; $1,000 were offered for the recovery of each of the diamond studs from the bosom of Mr. Nathan's shirt; other rewards were offered for watches, etc., and one of

$1,000 for the identification of the iron strap found in the vestibule of the house after the tragedy; while the Stock Exchange, of which the deceased was a member, offered $10,000 for the discovery of the perpetrators of the awful crime. Notwithstanding these and other inducements of a monetary character, the criminals have never been brought to justice.

Vessels Underneath the Sea.

A hollow vessel, formed of metal or any other substance, and hermetically sealed, can be made to float under the water a given distance without sinking to the bottom. Copper, for example, is nearly nine times as heavy as water. A cubic foot of copper, made into a hollow, tight vessel of nine cubic feet capacity, would just float. By making it slightly smaller it would float at some depth below the surface. Careful measurements and exact calculations would be necessary to float such a vessel at a required depth. A torpedo boat capable of carrying six persons and remaining a number of hours under water was constructed during the late war, and one of the plans to release Napoleon from St. Helena contemplated the use of a vessel that could be used close to the island under the water.

Velocity of Elevators.

Few persons have any idea of the speed of an elevator. An ordinary guess wouldn't probably come within half a mile a minute of being right. Some elevators run as slowly as eighty feet a minute. The average speed of elevators is about 225 feet a minute. This includes ordinary stoppages. The elevators in the Equitable Building, N. Y., have a run of 135 feet from basement to top of building, and it takes twenty seconds to make that run without stops. In a day of nine hours these elevators run over ten miles. The elevators in the Western Union Telegraph Building, N. Y., are exceedingly lively. They have developed a speed of 500 feet a minute.

History of the Telephone.

The principle of the telephone, that sounds could be conveyed to a distance by a distended wire, was demonstrated by Robert Hook in 1667, but no practical application was made of the discovery until 1821, when Professor Wheatstone exhibited his "Enchanted Lyre," in which the sounds of a music-box were conveyed from a cellar to upper rooms. The first true discoverer of the speaking telephone, however, was Johann Philipp Reis, a German scientist and professor in the institute at Friedrichsdorf. April 25, 1861. Reis exhibited his telephone at Frankfort. This contained all the essential features of the modern telephone, but as its commercial value was not at all comprehended, little attention was paid to it. Reis, after trying in vain to arouse the interest of scientists in his discovery, died in 1874, without having reaped any advantage from it, and there is no doubt that his death was hastened by the distress of mind caused by his continual rebuffs. Meanwhile, the idea was being worked into more practical shape by other persons, Professor Elisha Gray, and Professor A. G. Bell, and later by Mr. Edison. There is little doubt that Professor Gray's successful experiments considerably antedated those of the others, but Professor Bell was the first to perfect his patent. February 12, 1877, Bell's articulating telephone was tested by experiments at Boston and Salem, Mass., and was found to convey sounds distinctly from one place to the other, a distance of eighteen miles. This telephone was exhibited widely in this country and in Europe during that year. and telephone companies were established to bring it into general use. Edison's carbon "loud-speaking" telephone was brought out in 1878. It is not worth while to go into details of the suits on the subject of priority of invention. The Examiner of Patents at Washington, July 21, 1883, decided that Professor Bell was the first inventor, because he was the first to complete his invention and secure a full patent. Since 1878 there have been many improvements in the different parts of the telephone, rendering it now nearly perfect in its working.

The Sphinx.

The word sphinx is from the Greek, and means the strangler, and was applied to a fabled creature of the Egyptians, which had the body of a lion, the head of a man or an animal, and two wings attached to its sides. In the Egyptian hieroglyphs the sphinx symbolized wisdom and power united. It has been supposed that the fact that the overflow of the Nile occurred when the sun was in the constellations Leo and Virgo gave the idea of the combinations of form in the sphinx, but this idea seems quite unfounded. In Egypt the reigning monarch was usually represented in the form of a sphinx. The most remarkable sphinx is that near the pyramids at Gizeh. It is sculptured from the rock, masonry having been added in several places to complete the form. It is 172½ feet long by 53 feet high, but only the head of this remarkable sculpture can now be seen, the rest of the form having been concealed by the heaped-up sands of the desert. Numbers of smaller sphinxes have been found in Egypt, and also in the sculptures of Assyria, Babylonia, and Phœnicia.

The Egyptian Pyramids.

The great pyramid of Gizeh is the largest structure of any kind ever erected by the hand of man. Its original dimensions at the base were 764 feet square, and its perpendicular height in the highest point is 488 feet; it covers four acres, one rood and twenty-two perches of ground, and has been estimated by an eminent English architect to have cost not less than £30,000,000, which in United States currency would be about $145,200,000. Internal evidences proved that the great pyramid was begun about the year 2170 B. C., about the time of the birth of Abraham. It is estimated that about 5,000,000 tons of hewn stones were used in its construction, and the evidence points to the fact that these stones were brought a distance of about 700 miles from quarries in Arabia.

The Oldest of All the Obelisks

is the beautiful one of rosy granite which stands alone among the green fields upon the banks of the Nile, not far from Cairo. It is the gravestone of a great ancient city which has vanished and left only this relic behind. The city was the Bethshemesh of the Scriptures, the famous On, which is memorable to all Bible readers as the residence of the priest of Potipherah, whose daughter, Assenath, Joseph married. The Greeks called it Heliopolis, the city of the sun, because there the worship of the sun had its chief center and its more sacred shrines.

History of Cleopatra's Needle.

The two obelisks known as Cleopatra's Needles were set up at the entrance of the Temple of the Sun, in Heliopolis, Egypt, by Thothmes III., about 1831 B. C. We have no means of knowing when they were built, or by whom, except from the inscriptions on them, which indicate the above time. The material of which they were cut is granite, brought from Syene, near the first cataract of the Nile. Two centuries after their erection Rameses II. had the stones nearly covered with carvings setting out his own greatness and achievements. Twenty-three years before Christ, Augustus Cæsar moved the obelisks from Heliopolis to Alexandria and set them up in the Cæsarium, a palace which now stands, a mere mass of ruins, near the station of the railroad to Cairo. In 1819 one of these obelisks was presented by the Egyptian Government to England, but as no one knew how to move them, it was not taken to London until 1878. Subsequently the other obelisk was presented to the United States.

How Cleopatra's Needle Was Brought Over from Egypt, and How it Was Handled.

The work of moving the great Egyptian obelisk from Alexandria to New York was managed by Commander H. H. Gorringe, of the United States Navy. The officer reached Alexandria October 16, 1879, and at once began to work with one hundred Arabs, who completed the excavation of the obelisk's pedestal by removing 1.730 cubic yards of earth in about twenty days. The machinery for lowering the monolith was then attached, and the block was laid in a horizontal position. Within the foundation and steps of the pedestal were found stones and implements engraved with emblematic designs, and some delay was caused in order that these might be taken up very carefully to be placed in exactly the same position in the pedestal when re-erected in New York. The obelisk was removed to the wharf and upon the steamer waiting for it, by means of cannon balls rolling in metal grooves. The shaft, pedestal, and steps of the obelisk were removed separately, the entire mass weighing 1,470 tons. The steamer bearing this freight left Alexandria June 12, 1880, and arrived at Staten Island July 20. The iron tracks and cannon balls were adjusted after some delay, and on these the monolith was disembarked September 16. Next the rise and fall of the tide was utilized to float it up the North River and land it at the foot of Ninety-sixth street, where it was moved by steam power on tracks with rollers, along Tenth avenue and across Eighty-sixth street to Central Park. The track was two miles long, and was inclined, the upper part of it being laid on trestle-work, in order to bring the shaft, when it it was to be raised, at a proper height above the pedestal. Pulleys, chains, and ropes were then attached, and the signal being given, the great mass was rapidly and gently raised, and in a short time stood firmly upon the base which had been previously securely put in place.

Curiosities of Marriage.

Goethe said he married to obtain respectability.

Wycherly, in his old age, married his servant girl to spite his relations.

The joining of right hands in ancient times had the solemnity and validity of an oath.

Giving a ring is supposed to indicate the eternity of the union, seeing that a circle is endless.

Under the Roman empire, marriage was simply a civil contract; hence we read of men "putting away" their wives.

Among the Jews the rule was for a maiden to marry on the fourth and a widow on the fifth day of the week—not earlier.

In Jewish marriages the woman is set on the right, but throughout Christendom her place in the ceremony is on the left.

In a Roman marriage the bride was purchased by the bridegroom's payment of three pieces of copper money to her parents.

The custom of putting a vail upon the maid before the betrothal was done to conceal her blushes at the first touch of the man's hand and at the closing kiss.

Kissing the bride the moment the marriage ceremony ended, though not now prescribed by the rubric of the western churches, formerly was an imperative act on the part of the bridegroom.

The early marriage ceremony among the Anglo-Saxons consisted merely of hand-fastening, or taking each other by the hand, and pledging each other love and affection in the presence of friends and relatives.

An old adage thus lays down the proper days for wedlock:

"Monday for wealth, Tuesday for health, Wednesday the best day of all;
Thursday for crosses, Friday for losses, Saturday no luck at all."

Julius Cæsar's Wives.

Julius Cæsar had four wives. The first was named Cossutia, and he must have married her when very young, for when he was 17 years old, in the year 83 B. C., he divorced her in order to marry Cornelia, the daughter of Cinna, a leader of the democratic party. His Aunt Julia having married Marius, the foremost chief of the people's party, young Cæsar was doubly allied to that faction. Sulla, the patrician leader, endeavored to induce the young man to repudiate his wife, and as he would not do this, took from him both his fortune and his office. Sulla was induced by influence to withdraw his proscription, though unwillingly, remarking that he saw "in that perfumed youth a hundred Mariuses;" but Cæsar did not return to Rome until after the tyrant's death. Cornelia died in 68 B. C., and the following year Cæsar married Pompeia, a relative of Pompey, and a granddaughter of Sulla. She was divorced in B. C. 61, under the following circumstances: The Roman women held annually on the 1st of May a festival to the Goddess of Earth, or the Bona Dea. No men were allowed to be present at these festivals under pain of death. In the year mentioned the matrons met at the house of Cæsar, and a young man, named Publius Clodius, managed to obtain admittance, in the disguise of a female musician. He was, of course, detected, and as Pompeia was known to be friendly toward the young man, it was supposed that she had connived at the sacrilege, and had admitted the youth for criminal purposes. Cæsar made no charge against either his wife or Clodius, and when the latter was brought to trial for impiety, he would not give any testimony against him; nor would he admit to his friends that he believed the parties to be guilty, but he put away his wife, saying: "The wife of Cæsar should be above suspicion." The last wife of the great Roman was Calpurnia, the daughter of Lucius Piso, whom he married B. C. 59, and who survived him.

Three Great Railway Disasters.

The Angola horror occurred December 18, 1867, on the Lake Shore Railroad. It was caused by the breaking of a wheel, which threw the rear passenger car from the track while passing over an embankment twenty feet high. The car fell down the embankment, and was set on fire as it fell. Of the fifty passengers in the car, forty-two were burned to death. The Ashtabula horror also occurred on the Lake Shore Railroad. It was caused by the giving way of the bridge over Ashtabula Creek under the Western bound express train, on the evening of December 29, 1876. The train, which consisted of eleven cars and two engines, with 160 passengers, was precipitated into the creek seventy feet below. The wreck immediately took fire, and many who were not killed by the fall were burned to death. Of less than sixty persons who were rescued, a number died afterward from the effect of their injuries. There was a terrible snow-storm at the time, which prevented help from reaching the scene quickly. From the attendant circumstances, the accident was rendered one of the most terrible railway disasters on record. The Spuyten Duyvel disaster also occurred in the winter, and had the attendant horror of fire, which still continues to enhance the frightfulness of a mishap on the railway at that season, although the application of a little science, allied with common sense, might altogether prevent this shocking culmination. The last-named disaster occurred on the New York Central Road, January 13, 1882. The regular train had stopped in a cut to regulate a tightened air-brake, when a special train rushed into it, telescoping two passenger cars. Brakemen had been sent back to signal the special train, but a curve in the road prevented their being seen soon enough to prevent the disaster. Nine passengers were killed and a number of others were severely wounded.

The Famous "Loop" on the Southern Pacific Railroad.

The "loop" of the Southern Pacific is on the Sierra Mountains, between Majore and Caliente. It is one of the most wonderful exhibitions of engineering ingenuity ever known. First, the road runs through a tunnel, then it bridges an abyss, and finally crosses over itself, seemingly tying a bowknot with its own straps. By these skillful devices it is brought to an elevation of 3,549 feet above the plains. This is the Tehechape Pass, by which Fremont first crossed the mountain ridge between Northern and Southern California.

Railroad Facts.

The cost of railroads in the United States has been nine billion dollars.

One million persons are employed by the railroads of the United States.

The cost of a high-class eight-wheel passenger locomotive is about $8,500.

The cost of a palace sleeping-car is $15,000, or if "vestibuled," $17,000.

The average cost of constructing a mile of railroad in the United States at the present time is about $30,000.

The average daily earning of an American locomotive is about $100.

The "consolidation" locomotive weighs 50 tons, and is able to draw on a level over 2,400 tons.

The longest mileage operated by a single system is that of the Atchison, Topeka, and Santa Fe—about 8,000 miles.

The line of railroad which extends farthest east and west is the Canadian Pacific, running from Quebec to the Pacific Ocean.

There are sixty miles of snow-sheds on the Central Pacific Railroad.

The highest railroad in the United States is the Denver and Rio Grande at Marshall Pass—10,852 feet.

The longest American railroad tunnel is the Hoosac Tunnel on the Fitchburg Railroad—four and three-quarter miles. (The St. Gothard Tunnel in Europe is over nine miles in length.)

There are 208,749 railroad bridges in the United States, spanning 3,213 miles.

SPORTING MATTERS.

Baseball Summary for 1895—National League.

CLUBS.	Won.	Lost.	Post-poned.	Aver-age.
Baltimore	87	43	2	.669
Cleveland	84	46	2	.646
Philadelphia	78	53	1	.595
Chicago	72	58	2	.554
Brooklyn	71	60	1	.542
Boston	71	60	1	.542
Pittsburg	71	61	0	.538
Cincinnati	66	64	2	.508
New York	66	65	1	.504
Washington	43	85	4	.336
St. Louis	39	92	1	.298
Louisville	35	96	1	.267

Winners of National League Games from 1880 to 1895.

Year.	Champion Club.	Won.	Lost.	Aver-age.
1880	Chicago	67	17	.798
1881	Chicago	56	28	.667
1882	Chicago	55	29	.655
1883	Boston	63	35	.643
1884	Providence	84	28	.750
1885	Chicago	87	25	.776
1886	Chicago	90	34	.725
1887	Detroit	79	45	.637
1888	New York	84	47	.641
1889	New York	83	43	.659
1890	Brooklyn	86	43	.667
1891	Boston	87	51	.630
1892.(*a*)	Boston	52	22	.703
1892.(*b*)	Cleveland	53	23	.697
1893	Boston	86	44	.662
1894	Baltimore	89	39	.695
1895	Baltimore	87	43	.669

(*a*) and (*b*) represent the first and second divisions of the championship season.

MONARCHS OF THE TURF IN 1895.

TROTTING.	PACING
Alix..................2.03¾	Robert J..............2.02½

Running Turf—Dashes—Best at all Distances.

DISTANCE.	Name, Age, Weight, and Sire.	Place.	Date.	Time.
¼ mile	Bob Wade, 4	Butte, Mont.	Aug. 20, '90.	0.21¼
⅜ "	Fashion, 4	Lampas, Tex.	Aug. 15, '91.	0.34
½ "	Geraldine, 4, by Grinstead, 122 lbs.	N. Y. J. C. (st. c.)	Aug. 30, '89.	0.46
	April Fool, 4, 122 lbs.	Butte, Mont.	July, 31, '91.	0.47
4½ furlongs.	Meadows, 5, 103 lbs.	Alexander Isl. (Va.)	Mar. 28, '95.	0.53
⅝ mile.	Maid Marian, 4, by Great Tom, 111 lbs.	N. Y. J. C.	Oct. 9, '94.	0.56¾
5½ furlongs.	Tormentor, 6, by Joe Hooker, 121 lbs.	N. Y. J. C.	Oct. 10, '93.	1.03
Futurity*	Kingston, aged, by Spendthrift, 139 lbs.	C. I. J. C.	June 22, '91.	1.08
¾ mile	Domino, 2, by Himyar, 128 lbs.	N. Y. J. C. (st. c.)	Sept. 29, '93.	1.09
	O Connell, 5, 121 lbs.	Oakley, Cal.	July 18, '95.	1.12¼
6½ furlongs.	Wernberg, 4, by Muscovy, 113 lbs.	C. I. J. C.	Aug. 28, '95.	1.19 2-5
	Irish Reel, 3, by Exile, 108 lbs.	C. I. J. C.	Aug. 31, '95.	
⅞ mile	Bella B., 5, by Enquirer, 103 lbs.	Monmouth Pk. (st. c.)	July 8, '90.	1.23½
	Clifford, 4, by Bramble, 127 lbs.	C. I. J. C.	Aug. 29, '94.	1.21 2-5
7½ furlongs.	Mamie Scott, 3, by Canny Scott, 90 lbs.	San Francisco	Oct. 17, '95.	1.33¼
1 mile	Salvator, 4, by Imp. Prince Charlie, 110 †.	Monmouth Pk. (st. c.)	Aug. 28, '90.	1.35½
1 "	Libertine, 3, by Leonatus, 90 lbs.	Chicago, Ill.	Oct. 24, '94.	1.38¾
1 "	Arab, 8, by Dalnacardoch, 93 lbs.	N. Y. J. C.	June 11, '94.	1.39
	Ducat, 4, by Deceiver, 113 lbs.	C. I. J. C.	Aug. 28, '94.	
1 "	Kildeer, 4, by Imp. Darebin, 91 lbs.	Monmouth Pk. (st. c.)	Aug. 13, '92.	1.37¼
1 " 20 yds.	Maid Marian, 4, by Imp. Great Tom, 101 lbs	Chicago (Wash. Park).	July 21, '93.	1.40
1 " 70 yds.	Wildwood, 4, by Wildidle, 115 lbs.	Chicago (Wash Pk.)	July 19, '93.	1.44
	Faraday, 4, by Himyar, 102 lbs.		July 9, '93.	
	Cash Day, 3, by Strathmore, 109 lbs.		July 10, '94.	
	Sullross, aged, by Foster, 96 lbs.		July 10, '94.	
1 1-16 mile	Cash Day, 3, by Strathmore, 102 lbs	Chicago (Harlem)	Sept. 1, '94.	1.45½
	Yo Tambien, 3, by Joe Hooker, 99 lbs.	Chicago (Wash. Park).	July 19, '92.	
1⅛ "	Tristan, 6, by Imp. Gleneig, 114 lbs.	Morris Park, N. Y.	June 2, '91.	1.51½
1 3-16 "	Henry Young, 4, by Duke of Montrose, 108.	Chicago (Wash. Park).	July 14, '94.	1.58½
1¼ "	Banquet, 3, by Imp. Rayon d'Or, 108 lbs.	Monmouth Pk. (st. c.)	July 17, '90.	2.03¾

1 m. 500 yds.	Bend Or, 4, by Buckden, 115 lbs.	Saratoga, N. Y.	July 25, '82.	....	2.10½
15-16 miles..	Sir John, 4, by Sir, Modred, 116 lbs.	N. Y. J. C.	June 9, '92.	....	2.14¼
1⅜ " ..	Sabine, 4, by Rossington, 109 lbs.	Chicago (Wash. Park).	July 5, '94.	....	2.18⅜
1½ " ..	Lamplighter, 3, by Spendthrift, 109 lbs.	Monmouth Park.	Aug. 9, '92.	....	2.32¾
1⅝ " ..	Hindoocraft, 3, by Hindoo, 75 lbs.	Morris Park, N. Y.	Aug. 27, '89.	....	2.48
1⅞ " ..	Enigma, 4, by Enquirer, 90 lbs.	Sheepshead Bay, N. Y.	Sept. 15, ,85.	....	3.20
2 " ..	Ten Broeck, 5, by Imp. Phaeton, 110 lbs †	Louisville, Ky.	May 29, '77.	....	3.27½
2⅛ " ..	Joe Murphy, 4, by Isaac Murphy, 99 lbs.	Chicago (Harlem).	Aug. 30, '94.	....	3.42
2¼ " ..	Springbok, 5, by Imp. Australian, 114. Preakness, aged, by Lexington, 114 lbs	Saratoga, N. Y.	July 29, '75.	....	3.56¼
2½ " ..	Aristides, 4, by Imp. Leamington, 104 lbs.	Lexington, Ky.	May 13, '76.	....	4.27½
2⅝ " ..	Ten Broeck, 4, by Imp. Phaeton, 104 lbs.	Lexington, Ky.	Sept. 16, '76.	....	4.58½
2¾ " ..	Hubbard, 4, by Planet, 107 lbs.	Saratoga, N. Y.	Aug. 9, '73.	....	4.58¾
3 " ..	Drake Carter, 4, by Ten Broeck, 115 lbs.	Sheepshead Bay, N. Y.	Sept. 6, '84.	....	6.24
4 " ..	Ten Broeck, 4, by Imp. Phaeton, 104 lbs. †	Louisville, Ky.	Sept. 27, '76.	....	7.15¾

Heats—Best Two in Three.

¼ mile......	Sleepy Dick, aged	Kiowa, Kan.	Oct. 19, '88.	0.21½	0.22¼
½ "	Quirt, 3, 122 lbs.	Vallejo, Cal.	Obt. 5, '94.	0.47¼	0.47½
4½ furlongs.	Susie S., aged, by Ironwood	Santa Rosa, Cal.	Aug. 23, '89.	0.55	0.55¾
⅝ mile.......	Kitty Peaso, 4, by Jack Hardy, 82 lbs.	Dallas, Tex.	Nov. 2, '87.	1.00	1.00
¾ "	Tom Hayes, 4, by Duke of Montrose, 107..	Morris Pk., N.Y. (st. c.)	June 17, '92.	1.10½	1.12¾
⅞ "	Hornpipe, 4, by Imp. St. Mungo, 105 lbs.	Chicago (Westside).	July 19, '88.	1.30	1.30
1 "	Guido, 4, by Double Cross, 117 lbs.	Chicago (Wash. Park).	July 11, '91.	1.41½	1.41½
1 1-16 mile..	Slipalong, 5, by Longfellow, 115 lbs.	Chicago (Wash. Park).	Sept. 2, '85.	1.50½	1.48
1⅛ miles . ..	Gabriel, 4, by Alarm, 112 lbs.	Sheepshead Bay, N. Y.	Sept. 23, '80.	1.56	1.56
1¼ "	Mary Anderson, 3, 83 lbs., won first heat in	....	....	....	2.09
1½ "	Keno, 6, by Chillicothe	Toledo, O.	Sept. 16, '80.	2.43½	2.45
1½ "	Belle of Nelson, 5, won second heat in	....	....	....	2.45
2 "	Bradamante, 3, by War Dance, 87 lbs.	Jackson, Miss.	Nov. 17, '77.	3.32	3.29
3 "	Norfolk, 4, by Lexington, 100 lbs.	Sacramento, Cal.	Sept. 23, '65.	5.27½	5.29½
4 "	Glenmore, 4, by Glen Athol, 108 lbs.	Baltimore, Md.	Oct. 25, '79.	7.30¼	7.31
4 "	Willie D., 4, 105 lbs., won first heat in	....	....	....	7.29½

* Course, 170 feet less than ¾-mile. † Races against time.

Heats—Best Three in Five.

Dist. Mile.	Name.	Place.	Date.	Time-				
½	Haddington, 6, by Haddington, 118 lbs.	Petaluma, Cal.	Aug. 28, '83.			0.49½	0.50½	0.49¾
	Aunt Betsy, 3, 106 lbs.; won first heat in			0.49½				
¾	Gleaner, aged, by Gleneig, 112 lbs.	Wash. Pk., Chicago	July 5, '86.			1.15	1.14½	1.15⅝
1	Thad Stevens, aged by Langford, 100 lbs.	Sacramento, Cal.	July 8, '73.			1.43½	1.46½	1.45
	Thornhill won the first and second heats in			1.43	1.43			
1	L'Argentine, 6, 115 lbs.	St. Louis.	June 14, '79.	1.43		1.44		1.47¾
1 1-16	Dave Douglas, 5, by Leinster... First and third were dead heats.	Sacramento, Cal.	Sept. 23, '87.	1.51½	1.51½	1.51½	1.54	1.50½

Hurdle Races.

Distance.	Name.	Place.	Date.	Time.	
1 mile	Swannanoe, aged, by Red Dick, 120 lbs.	Brighton Beach, N. Y.	July 16, '81.		1.50
1 1-16 miles.	Judge Jackson, aged, by Buckden, 138 lbs.	Latonia, Ky.	May 29, '86.		1.59¼
1⅛ miles	Winslow, 4, by Ten Broeck, 138 lbs.	Chicago (Westside)	Aug. 29, '88.		2.02¾
1 3-16 miles.	Jim Murphy, 4, by Fellowcraft, 133 lbs.	Saratoga, N. Y.	Aug. 21, '88.		2.12
1¼ miles	Bourke Cockran, 4, by War Dance, 127 lbs	Brighton Beach, N. Y.	Nov. 9, '82.		2.16
1⅜ "	Guy, aged, by Narragansett, 155 lbs.	Latonia, Ky.	Oct. 8, '85.		2.35
1½ "	Kitty Clark, 3, by Gleneig, 130 lbs.	Brighton Beach, N. Y.	Aug. 23, '81.		2.47
1⅝ "	Turfman, 5, by Revolver, 140 lbs.	Saratoga, N. Y.	Aug. 7, '82.		3.16
1¾ "	Kitty Clark, 4, by Gleneig, 142 lbs.	Monmouth, N. J.	July 12, '82.		3.17
2 "	Tom Leathers, ag'd, by Camp's Whale, 117	New Orleans, La.	April 16, '75.		3.47½
2¼ "	Buckra, aged, by Buckden, 168 lbs.	Sheepshead Bay, N. Y.	June 21, '87.		4.26
Mile heats	Will Davis, aged, by Fadladeen, 140 lbs.	Chicago	July 3, '86.	1.49½	1.51

Winners of Stake Races.

YEAR.	DERBY. 1½ miles.	Jockey.	OAKS. 1½ miles.	ST. LEDGER. 1m. 6f. 132yds.	2,000 GUINS. 1 m. 11 yds.
1888	Duke of Portland's Ayrshire	F. Barret	Seabreeze [arre	Seabreeze	Ayrshire.
1889	Duke of Portland's Donovan	T. Loates	L'Abbss. de Jou-	Donovan	Enthusiast.
1890	Sir J. Miller's Sainfoin	J. Watts	Memoir	Memoir	Surefoot.
1891	Sir F. Johnstone's Common	G. Barrett	Mimi	Common	Common.
1892	Lord Bradford's Sir Hugo	F. Allsopp	La Fleche	La Fleche	Bonavista.
1893	H. McCalmont's Isinglass	T. Loates	Mrs. Butterick	Isinglass	Isinglass.
1894	Lord Rosebery's Ladas	J. Watts	Amiable	Throstle	Ladas.
1895	Lord Rosebery's Sir Visto	S. Loates	La Sagesse	Sir Visto	Kirkconnel.

PEDESTRIANISM—WALKING.

DISTANCE.	Professional.	Time.	Amateur.	Time.
		H. M. S.		H. M. S.
1 mile	W. Perkins, England	.. 6 23	F. P. Murray, America.	.. 6 29 3-5
2 "	J. W. Raby, England	.. 13 14	F. P. Murray, America	.. 13 48 3-5
3 "	J. W. Raby, England	.. 20 20½	F. P. Murray, America	.. 21 9 1-5
4 "	J. W. Raby, England	.. 27 38	W. H. Meek, England	.. 29 10
5 "	J. W. Raby, England	.. 35 10	H. H. Curtis, England	.. 37 17
6 "	J. W. Raby, England	.. 43 1	H. H. Curtis, England	.. 44 57
7 "	J. W. Raby, England	.. 51 4	H. H. Curtis, England	.. 52 28 2-5
8 "	J. Meagher, America	.. 58 37	H. H. Curtis, England	1 1 6 1-5
9 "	J. W. Raby, England	1 7 14	E. E. Merrill, America	1 10 8
10 "	J. W. Raby, England	1 14 45	E. E. Merrill, America	1 17 40¼
15 "	J. W. Raby. England	1 55 56	T. Griffith, England	2 0 27
20 "	W. Perkins, England	2 39 57	T. Griffith, England	2 47 52
25 "	W. Franks, England	3 35 14	W. E. N. Coston, England	3 53 35
50 "	W. Howes, England	7 57 44	A. W. Sinclair, England	8 25 25½
100 "	W. Howes, England	18 8 15	A. W. Sinclair, England	19 41 50

Trotting—In Harness.

DISTANCE.	Name.	Place.	Time.	Time.		
1 mile by a yearling	Pansy McGregor	Holton, Kan. (kite)	Nov. 18, '93.			2.23¾
1 “ “ “	Adbell*	San Jose, Cal. (reg)	Sept. 28, '94.			2.23
1 “ “ 2-year-old.	Arion *	Stockton, Cal. (kite)	Nov. 10, '91.			2.10¾
1 “ “ “	Impetuous	Nashville, Tenn. (reg.)	Oct. 16, '94.			2.15¾
1 “ “ 3-year-old.	Fantasy	Nashville, Tenn. (reg.)	Oct. 17, '93.			2.08¾
1 “ “ 4-year-old.	Directum	Nashville, Tenn. (reg.)	Oct. 18, '93.			2.05¼
1 “ “ 4 year-old.	Fantasy*	Terre Haute, Ind. (reg.)	Sept. 13, '94.			2.06
1 “ “ 5-year-old.	Alix	Terra Haute, Ind. (reg.)	Aug. 17, '94.			2.05¼
1 “ “ 6-year-old.	Alix *	Galesburg, Ill.	Sept. 19, '94.			2.03¾
Best three heats	Alix	Terre Haute, Ind	Aug. 17, '94.	2.06	2.06¼	2.05¼
2 miles	Greenlander	Terre Haute, Ind	Nov. 4, '93.			4.32
3 “	Nightingale*	Nashville, Tenn. (reg.)	Oct. 20, '93.			6.55½
4 “	Senator L	San Jose, Cal. (reg.)	Nov. 2, '94.			10.12
5 “	Bishop Hero	Oakland, Cal. (reg.)	Oct. 14. '93.			12.30¾
10 “	Pascal *	New York, N. Y. (reg.)	Nov. 2, '93.			26.15
20 “	Captain McGowan*.	Boston, Mass. (reg.)	Oct. 31, '65.			58.25
30 “	General Taylor*	San Francisco, Cal	Feb. 21, '57.			1.47.59
50 “	Ariel*	Albany, N. Y	'46.			3.55.40½
100 “	Conqueror*	Centreville, L. I.	Nov. 12, '53.			8.55.53

To Wagon.

1 mile	Guy*	Detroit, Mich	July 18, '93.			2.13
1 mile in a race	Alfred S.	Philadelphia, Pa.	Sept. 4, '90.			2.16¾
Best three heats	Hopeful	Chicago, Ill	Oct. 12, '78.	2.16½	2.17	2.17
2 miles	General Butler	Fashion Track, L. I.	June 18, '63.			4 56¼
2 “	Dexter	Fashion Track, L. I.	Oct. 27, '65.			4 56¼
3 “	Prince	Centreville, L. I.	Sept. 15, '57.			7.53½
5 “	Fillmore	San Francisco, Cal	April 18, '63.			13.16
10 “	Julia Aldrich	San Francisco, Cal	June 15, '58.			29.04½
20 “	Controller	San Francisco, Cal	April 20, '78.			58.57

Under Saddle.

1 mile	Great Eastern	Fleetwood Park, N. Y.	Sept. 22, '77.	....	....	2.15¾
2 miles	George M. Patchen.	Fashion Track, L. I.	July 1, '63.	....	....	4.56
3 "	Dutchman	Beacon Track, Hoboken	Aug. 1, '39.	....	....	7.32½
4 "	Dutchman	....	May, '36.	....	....	10.51

By Teams.

1 mile. Belle Hamlin* and Honest George, at Providence, R. I., driven by E. F. Geers to skeleton wagon with bicycle wheels, for a record—2.12¼—Sept. 23, 1892.

1 mile. Belle Hamlin* and Justina, at Independence, Iowa (kite-shaped track), driven by their breeder, C. J. Hamlin, 72 years old, to skeleton wagon, for a record—2.13¾—Oct. 24, 1890.

1 mile (in a race). Rose Leaf and Sally Simmons, driven by G. Starr, at Columbus, O., Sept. 27, 1894—2.15¼.

WITH RUNNING MATE—1 mile. Ayres P.,* at Kirkwood (kite-shaped track), July 3, 1893—2.03¼.

Pacing—In Harness.

DISTANCE.	Name.	Place.	Date.	Time.		
1 mile	Robert J*	Terre Haute, Ind. (reg.)	Sept. 14, '94.	....	....	2.01½
1 "	Robert J.	Indianapolis, Ind. (reg.)	Sept. 5, '94.	....	....	2.02½
1 " by a yearling	Belle Acton*	Lyons, Neb. (kite)	Oct. 14, '92.	....	....	2.20¾
1 " 2-year-old	Directly *	Galesburg, Ill. (reg.)	Sept. 20, '94.	....	....	2.07¾
1 " "	Lena Hill	Dallas, Tex. (reg.)	Oct. 28, '93.	....	....	2.12¾
1 " 3-year-old	Directly *	Fresno, Cal.	Feb. 1, '95.	....	....	2.07¼
1 " 4-year-old	Online *	Sioux City, Ia. (reg.)	Oct. 12, '94.	....	....	2.04
1 " best by mare	Angie D.	Detroit, Mich	July 23, '95.	....	....	2.07
1 " " stallion.	John R. Gentry	Terre Haute, Ind. (reg.)	Sept. 14, '94.	....	....	2.03¾
2 miles	W. W. P.*	Lincoln, Neb.	Oct. 31, '95.	....	....	4.22¾
3 "	James K. Polk	Centreville, L. I. (reg.)	Sept. 13, '47.	....	....	7.44
3 "	Joe Jefferson *	Knoxville, Ia. (reg.)	Nov. 6, '91.	....	....	7.33¼
4 "	Joe Jefferson *	Knoxville, Ia. (reg.)	Nov. 13, '91.	....	....	10.10
5 "	Fisherman	San Francisco, Cal. (reg.)	Dec. 19, '74.	....	....	13.03½
1 mile, best 3 heats	Robert J.	Indianapolis, Ind. (reg.)	Sept. 6, '94.	2.03¾	2.02½	2.04¾

* Against time.

BICYCLING—CLASS A RECORDS.

COMPETITION.

Miles.	Time. M. S.	Name.	Place.	Date.
¼	.26 4-5	F. Loughead	Springfield	Sept. 11, 1895
⅓	.43 3-5	H. Jensen	Salt Lake City	Oct. 5, 1895
½	1.01	F. Byrne	St. Joseph	Sept. 10, 1895
¾	1.35	J. E. Walsh	Springfield	Sept. 12, 1895
1	2.02 4-5	C. C. Collins	Denver	Oct. 17, 1895
		PACED, FLYING START.		
¼	.25 1-5	A. W. Porter	Waltham	Nov. 2, 1894
⅓	.34 4-5	A. W. Porter	Waltham	Nov. 2, 1894
½	.53	A. W. Porter	Waltham	Nov. 2, 1894
⅔	1.15	A. W. Porter	Waltham	Oct. 20, 1894
[illegible]	1.24	A. W. Porter	Waltham	Oct. 20, 1894
1	1.52 3-5	A. W. Porter	Waltham	Oct. 20, 1894
		UNPACED, FLYING START.		
¼	.25 4-5	C. C. Ingraham	Freeport	Sept. 1895
⅓	.38 1-5	W. De Cardy	Louisville	May 2, 1895
½	1.00 3-5	W. De Cardy	Louisville	May 3, 1895
⅔	1.18 4-5	W. Hamilton	Denver	Oct. 16, 1895
1	2.02 2-5	W. Hamilton	Denver	Oct. 13, 1895
2	4.30 4-5	H. Clark	Denver	Oct. 4, 1895
3	7.28 2-5	Senn	Utica	Oct. 19, 1894
4	10.04	Senn	Utica	Oct. 26, 1894
		UNPACED, STANDING START.		
¼	.28 1-5	H. Davidson	Waltham	....
½	1.03 2-5	F. J. Jenney	Oneonta	Aug. 8, 1894
1	2.16 4-5	L. Callahan	Denver	Aug. 18, 1895
2	4.30 4-5	H. Clarg	Denver	Oct. 4, 1895
3	7.41 3-5	F. B. Stowe	Springfield	Oct. 29, 1894
4	10.20	F. B. Stowe	Springfield	Oct. 29, 1894

Class B Records.

COMPETITION—STANDING START.

¼	.28 3-5	A. I. Brown	Decatur	Oct. 13, 1894
¼	.26 4-5	F. Loughead	Springfield	Sept. 11, 1895
⅓	.41 2-5	E. C. Bald	Chicago	Aug. 10, 1895
⅓	.38 1-5	W. De Cardy	Louisville	May 2, 1895
½	.58 1-5	C. M. Murphy	Denver	Oct. 19, 1895
⅔	1.22 3-5	H. C. Tyler	Waltham	Oct. 22, 1894
1	1.55 1-5	E. C. Bald	Waltham	Oct. 19, 1895
1	1.55 1 5	C. M. Murphy	Waltham	Oct. 19, 1895
2	4.04 2-5	F. J. Titus	Manhattan Beach	Aug. 14, 1895
3	6.06 2-5	F. J. Titus	Manhattan Beach	Aug. 14, 1895
4	8.11 3-5	F. J. Titus	Manhattan Beach	Aug. 14, 1895
5	10.18 1-5	F. J. Titus	Manhattan Beach	Aug. 14, 1895
6	12.23 3-5	F. J. Titus	Manhattan Beach	Aug. 14, 1895
7	14.29	F. J. Titus	Manhattan Beach	Aug. 14, 1895
8	16 33 4-5	F. J. Titus	Manhattan Beach	Aug. 14, 1895
9	18.46	F. J. Titus	Manhattan Beach	Aug. 14, 1895
10	20.58 4-5	P. J. Titus	Manhattan Beach	Aug. 14, 1895

STANDING START, PACED.

¼	.28	J. S. Johnson	Independence	Oct. 31, 1895
⅓	.39	J. S. Johnson	Chillicothe	Nov. 5, 1895
½	.55 1-5	J. S. Johnson	Chillicothe	Nov. 5, 1895
⅔	1.15	J. S. Johnson	Chillicothe	Nov. 24, 1895
¾	1.25	J. S. Johnson	Chillicothe	Nov. 24, 1895
*1	1.54 4-5	J. P. Bliss	Birmingham	Dec., 1895
1	1.52 1-5	J. S. Johnson	Louisville	Nov. 21, 1894
2	4.01	J. S. Johnson	Louisville	Nov. 15, 1894
3	6.09	J. S. Johnson	Louisville	Nov. 15, 1894
4	8.15 3-5	J. S. Johnson	Louisville	Nov. 15, 1894
5	10.22 3-5	J. S. Johnson	Louisville	Nov. 15, 1894

* Horse paced.

Bicycling—Class B Tandem Records.

FLYING START, PACED.

MILES.	Time. M. S.	Name.	Place.	Date.
¼	.23	Rigby and Johnson	Decatur	Oct. 28, 1894
⅜	.31 3-5	Bernhart and Goetz	Decatur	Oct. 30, 1894
½	.52 3-5	Long and Delmos	Sacramento	Oct. 11, 1894
⅔	1.12	Callahan Brothers	Waltham	Sept. 21, 1894
¾	1.23 1-5	Gardiner and Bainbridge	Waltham	Oct. 27, 1894
1	1.51 3-5	Butler and McDuffee	Waltham	Sept. 28, 1895

Class B Quadruple

MILES.	Time.	Names.	Place.	Date.
½	.51	Swanborough, Coniben, Stone and Dickson	Denver	Oct. 17, 1895
1	1.47 4-5	Swanborough, Coniben, Stone and Dickson	Denver	Oct. 17, 1895

Professional Records.

FLYING START; PACED.

MILES.	Time.	Name.	Place.	Date.
¼*	.26	P. J. Berlo	Hartford	Oct. 10, 1895
½*	.52 4-5	H. C. Tyler	Manhattan Beach	Aug. 14, 1895
¾*	1.20	P. J. Berlo	Hartford	Oct. 10, 1895
1*	1.41 1-5	J. S. Johnson	Louisville	Oct. 21, 1895
		COMPETITION.		
2	4.25 2-5	W. C. Sanger	Springfield	Sept. 12, 1895

* World's records.

BILLIARDS—RECORDS.

Three-Ball Straight-Rail.—Highest run on record, 1,531, on a 5x10 table, by Maurice Vignaux, at Paris, France, April 10-14, 1880, against G. F. Slosson. Harvey McKenna, who died Nov. 4, 1889, in New York, in an exhibition game on a 5x10 table, scored a run of 2,572, and an average of 416⅔, at Boston, Mass., Dec. 21, 1887; and Jacob Schaefer, in a match game played at San Francisco in 1890, scored a run of 3,000 on a 4½x9 table. His average was 750. The best average at the three-ball straight-rail game, on a 5x10 table, is 333⅓, by Jacob Schaefer, at Central Music Hall, Chicago, May 15, 1879.

Cushion Caroms.—Highest run, 76, on a 5x10 table, by William Sexton, at Tammany Hall, New York, Dec. 19, 1881, against Jacob Schaefer. Best average, 10 in 200 points, on a 5x10 table, by Jacob Schaefer, at Chicago, Nov. 10, 1887.

Champions' Game (Triangular corner lines).—Highest run on record (18x38 lines), 398, on a 5x10 table, by George F. Slosson, at Paris, Jan. 30 to Feb. 3, 1882, against Maurice Vignaux. Slosson made the best average on record in this match, 38 36-78, in 3,000 points up.

Balk-Line Game.—Highest run at 8-inch balk-line game, 329, on a 5x10 table; the highest average is 44 52-67, both by Maurice Vignaux, at Paris, January, 1884.

Highest run at 14-inch balk-line game, anchor nurse permitted, 566, by Jacob Schaefer, New York, Dec. 16, 1893. At anchor nurse barred, Frank C. Ives made 359, at Chicago, December 6, 1894.

With anchor nurse allowed, Jacob Schaefer and Frank C. Ives each made an average of 100, at Chicago, January, 1894. Ives made an average of 63 2-10 at anchor barred, New York, Nov. 13, 1894.

POOL IN 1895.

FLYNN'S BILLIARD ROOM, NASSAU ST., NEW YORK, FEBRUARY 1.—Continuous pool for a stake of $225. Alfredo de Oro, Havana, Cuba, 150; Grant Eby, Springfield, Ohio, 110.

FLYNN'S BILLIARD ROOM, NASSAU ST., NEW YORK, FEBRUARY, 20.—Continuous pool for a stake of $400. Alfredo de Oro, Havana, Cuba, 200; Grant Eby, Springfield, Ohio, 182.

'RAVENNA, O., FEBRUARY 1.—Continuous pool, three nights' play, for $150. William H. Clearwater, Ravenna, 600· Albert G. Powers, Chicago, 554.

PRINCIPAL LAND BATTLES OF THE WAR OF 1812

Date	Battles	American	Loss	British	Loss
1812—Aug. 5	Brownstown, Canada	200		600	
Aug. 9	Maguauga	600		900	
Aug. 15	Detroit	2,500	Surrender.	1,300	
Oct. 13	Queenstown	1,200	99 k., 900 w.	2,500	
Oct. 21	Ogdensburg	1,200	20 k. and w.	600	60 k. and w.
1813—Jan. 22	Frenchtown	800	260 k. and s.	1,500	
Apr. 27	York [Toronto]	1,700	300 k., w. and m.	1,500	
May 5	Fort Meigs	1,200	800 k., w. and p.	2,000	
May 27	Fort George, Canada		72 k. and w.		
May 27	Fort Mimms		300 k.		
May 29	Sackett's Harbor	1,000	100 k. and w.	1,000	60 k.
June 8	Stoney Creek		100 k., w. and p.		100 k., w. and p.
Aug. 2	Fort Stephenson	100	1 k., 7 w.	1,300	
Oct. 5	Thames, Canada	2,500	50 k. and w.	2,000	
Nov. 11	Chrysler's Field	1,500	200 k. and w.	2,000	
1814—Mar. 30	La Coel Mlil	4,000	150 k. and w.	2,000	
Apr. 25	Washington				
July 5	Chippewa	1,900	68 k., 267 w. & p.	2,100	
July 25	Lundy's Lane,	3,500		5,000	
Aug. 15	Fort Erie [assault]	2,500	84 k.	5,000	
Aug. 24	Bladensburg	3,500	Surrendered.	5,000	
Sep. 11	Plattsburg	3,000		12,000	
Sep. 12	North Point	2,000		5,000	
Sep. 13	Fort McHenry, Baltimore	3,000		Ships.	
Sep. 15	Fort Bowyer	120	8 k. and w.	Mixed	
Sep. 17	Fort Erie [sortie]	2,500	300 k. and w.	3,500	
Dec. 19	Fort Niagara	350	350 k, and p.	1,200	Slight,
Dec. 23	9 miles from New Orleans	3,000	240 k., w. and p.	2,500	
1815—Jan. 8	New Orleans	6,000	71 k., w. and p.	12,000	

Principal Naval Battles of the War of 1812

DATE	WHERE FOUGHT	AMERI. VESSELS & COMMAN'RS	BRIT. VESSELS & COMMAN'RS
1812			
Aug. 13	Off Newfoundland	Frig. Essex, Porter*	Sloop Alert, Laugharne.
Aug. 19	Off Massachusetts	Frig. Constitution, Hull*	Frig. Guerriere, Dacres.
Oct. 18	Off North Carolina	Sloop Wasp, Jones*	Frig. Frolic, Whinyates.
Oct. 25	Near Canary Islands	Frig. United States, Decatur*	Frig. Macedonian, Carden.
Dec. 29	Off San Salvador	Frig. Constitution, Bainbridge*	Frig. Java, Lambert.
1813			
Feb. 24	Off Demerara	Sloop Hornet, Lawrence*	Brig Peacock, Peake.
June 1	Massachusetts Bay	Frig. Chesapeake, Lawrence	Frig. Shannon, Broke.*
Aug. 14	British Channel	Brig Argus, Allen	Sloop Pelican, Maples.*
Sept. 5	Off coast of Maine	Brig Enterprise, Burrows*	Brig Boxer, Blythe.
Sept. 10	Lake Erie	9 vessels, 54 guns, Perry*	6 vessels, 63 guns, Barclay.
1814			
Mar. 28	Harbor of Valparaiso	Frig. Essex, Porter	Brig Phœbe, Hillyar.* Sloop Cherub, Tucker.
Apr. 29	Off coast of Florida	Sloop Peacock, Warrington*	Brig Epervier, Wales.
June 28	Near British Channel	Sloop Wasp, Blakely*	Sloop Reindeer, Manners.
Sept. 1	Near Africa	Sloop Wasp, Blakely*	Sloop Avon, Arbuthnot.
Sept. 11	Lake Champlain	14 ves., 86 guns, McDonough*	17 vessels, 95 guns, Downie.
Sept. 15	Mobile Bay	Fort Boyer, Major Lawrence*	4 ships, 90 guns, Col. Nichols.
Dec. 9	Lake Borgue	66 gunboats, Jones	40 barges, Lockyer.*
1815			
Jan. 15	Off New Jersey	Frig. President, Decatur	Squadron, Hayes.*
Feb. 20	Off Island of Madeira	Frig. Constitution, Stewart*	Ship Cyane, Falcon. Ship Levant, Douglas.
Mar. 23	Off Brazil	Sloop Hornet, Biddle*	Brig Penguin, Dickenson.

The * denotes the victorious party.

Receipts and Expenditures of the Government.

The following statement shows the ordinary receipts and expenditures for the fiscal year 1895 in comparison with those of the preceding year:

REVENUE AND DISBURSEMENTS.	1894.	1895.	Increase.	Decrease.
Revenue from Customs	$131,818,531	$152,150,617	$20,340,086	
Revenue from Internal Revenue	147,111,232	143,421,672		$3,689,560
Revenue from Sale of Public Lands	1,673,637	1,103,347		870,290
Revenue from Miscellaneous Sources	17,118,618	16,706,438		411,180
Total	$297,722,029	$313,390,075	$20,340,086	$4,671,030
Net decrease				15,669,056
Expenditures on account of—				
Civil and Miscellaneous, including Treasury Department, State Department, Attorney-General's Department, Postmaster-General's Department, Agricultural Department	$102,165,471	$93,279,730		$8,885,741
War Department	54,567,930	51,804,759		2,763,191
Navy Department	31,701,294	28,797,796		2,503,498
Indians	10,293,482	9,939,754		353,428
Pensions	141,177,285	141,395,229	$ 217,944	
Interest on Public Debt	27,841,406	30,978,030	3,136,524	
Total	$367,746,867	$356,195,298	$3,354,468	$14,505,858
Net decrease				11,551,390

Palmistry, or Hand-Reading.

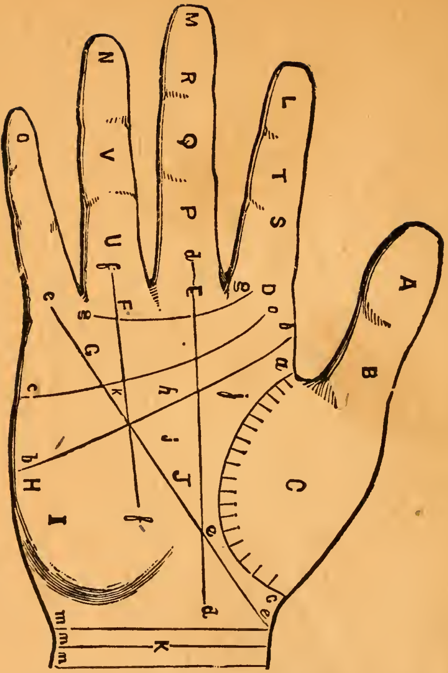
Palmistry is one of the methods by which it is possible to read the past and future from the lines in the palm of the hand. It is a science to be closely studied and relied upon. The "line of life," *a c*, for instance, as shown in diagram, is the crease running around the base of the thumb. If it be distinctly marked and of definite color, life is predicted as long and prosperous; but if it be pale, broad, and indefinite, life will be full of unhappiness. The years begin at *a* as marked in the diagram, and extend to *c*, in divisions from four to a hundred years. The divisions stand in their consecutive order as follows: 4, 8, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 80, 90, 100.

The direction and appearance of *b b*, the line of the head, bears a relation to the mental attributes. If the line be strongly marked, long and definite, there is much strength of character; but if the line is wanting, or incomplete, there is weakness of character and vacillation, and the mind has but little control over the passions and appetites. The line *c o*, is that of the heart. If it be distinct and fully traced, the one on whose hand it is found has a warm heart, full of affection, and will be true to friends. The line *d d*, called saturn or fate, when clear and distinct, and with few, if any, breaks is considered a sure index of the person being fortunate in most undertakings. The line *e e* is that of the liver, and by its degree of completeness the state of the health is judged. *f f*—in eastern Asia this line's development is watched with much solicitude as the youth advances in years, and if well defined at maturity, there is great rejoicing over the good fortune which it is supposed to indicate. The belt of Venus, shown by *g g*, is an evil line.

The appearance of the lines *m m* are indications by which the length and success of life are foretold. The triple bracelet, *m m m*, having three distinct marks, means a long and happy life.

The varieties in the shape and appearance of the fingers have their subtle meanings, as follows: Smooth fingers, to which belong inspiration, passion, instinct, intuition, grace; the finger with the square tip (L), accompanying theories, methods, intellectual taste, science, combination, literature; the spatulated finger (M), implying a love of things useful and physically perceptible, practical, commercial, agricultural, gymnastic; the conical finger (N), to which belong the plastic arts—painting, sculpture, architecture; the pointed finger (O), which belongs to contemplation, ideality, carelessness of material interests, poetry of the soul and of the heart, a desire for beauty in form and essence.

Similar interpretations are given to the variations in the shape of the hand. There are seven forms of the human hand, as follows: (1) The hand elementary, or hand with a large palm, the owner of which is content with simple fields of labor, and is not likely to soar above those avocations in which muscle, rather than skill, is required; (2) the hand



EXPLANATION OF DIAGRAM OF PALM.

(A) The Will. (B) Logic. (C) The Mount of Venus. (D) The Mount of Jupiter. (E) The Mount of Saturn. (F) The Mount of the Sun. (G) The Mount of Mercury. (H) The Mount of Mars. (I) The Mount of the Moon. (J) The Plain of Mars. (K) The Rascette. (L) Square finger. (M) Spatulate finger. (N) Conic finger. (O) Pointed finger. (P) The first phalange. (Q) The second phalange. (R) The third phalange. (S) The first joint (order). (T) The second joint (philosophy). (a c) The line of life. (b b) Line of the head. (c o) Line of the heart. (d d) Line of Saturn, or fate. (e e) Line of the liver. (f f) Line of the Sun, or fortune. (g g) Belt of Venus. (h) The quadrangle. (i) The triangle. (j) The upper angle. (k) The inner angle. (m m m) The bracelets of life.

necessary, or spatulated, which goes a little beyond the first, and aspires to be head gardener, or foremen over the laborer; (3) the hand artistic, or conical, devoted to the fine arts, taste in form and colors, and the beautiful in nature; (4) the useful, or square hand which is practical, ready for anything, fond of order and system, willing to work either at one thing or another; (5) the knotted hand, which is philosophical, accompanying a delight in the field of research and thought, experiment and application; (6) the psychological, or pointed hand, which loves perfection in mind, and seeks beauty of soul, refinement and culture; (7) the mixed hand, blending the qualities of others of these different types.

The tendencies and traits as shown by the hand should agree with those indicated by the fingers, and also those of the finger joints. The entire hand is read by the palmist, and not simply the lines upon it.

Hands of middle size show a spirit of synopsis, the conception and grouping of details. To large hands often belongs a spirit of minutiæ and trifling detail. The hard, stiff hand, which is opened wide and straight with difficulty, indicates intractability, a mind without pliancy, fond of going in grooves.

The person whose fingers tend to bend backward, through suppleness and elasticity, is endowed with sagacity, curiosity, and address. Fingers short and thick indicate cruelty. Fingers long and straggling are those of the intriguing and impostors, cheats and sharpers. Persons with very smooth, transparent fingers are curious and indiscreet. If the fingers are smooth and conical it is a sign of talkativeness and levity of mind. The musical mind is accompanied by long, well-formed fingers. If the fingers lie perfectly parallel, so that when held together no light can be seen between them, it is a sign of avarice. Strong and knotted fingers mean prudence and capacity.

The swelled muscles or "mounts" in the hand indicate, according to which of them predominate [see explanation] the ruling planets. The sons of Jupiter are strong, easy, jovial, frank; but his step-children are dissipated, vindictive, and quarrelsome. The Saturnians are long, thin, pale, gloomy, morose, grumbling. Another class of them are greedy, idle, hungry, sharpers. The children of the Sun are endowed with beauty and grandeur of soul, cheerful but wise. His less favored offspring are small, vain, boasting. The men born under the influence of Mercury are slim, wiry, active, boyish, animated, clever, and skillful. The sons of Mars are large, stong-built, red-faced, bold, reckless, great eaters and drinkers, fighters, politicians. They may also be burglars, garroters, thieves, brawlers, and demagogues. The descendants of the Moon are changeable, capricious, restless, cold, indolent, untruthful, mystical rather than religious, and full of curiosity. The children of Venus are fond of gay clothing, love pleasure, and are amiable, affectionate, compassionate.

Highest and Greatest Mountains in the World.

NAME.	COUNTRY	Feet High.	Miles
Mt. Everest (Himalayas)	Thibet	29,002	5¾
Sorato, the highest in America	Bolivia	21,284	4
Illimani	Bolivia	21,145	4
Chimborazo	Ecuador	21,422	4⅔
Hindoo-Koosh	Afghanistan	20,600	3¾
Demavend, highest of Elburz Mts	Persia	20,000	3¾
Cotopaxi, highest volcano in the world	Ecuador	19,496	3¾
Antisana	Ecuador	19,150	3½
St. Elias, highest in North America	Alaska	17,850	3⅓
Popocatapetl, volcano	Mexico	17,540	3⅓
Mt. Roa, highest in Oceanica	Hawaii	16,000	3
Mt. Brown, highest peak of R'ky Mts	Brit. America	15,900	3
Mont Blanc, highest in Europe, Alps	Savoy	15,732	3
Mt. Rosa, next highest peak of Alps	Savoy	15,150	2⅞
Limit of perpetual show at the	Equator	15,207	2⅞
Pichinca	Ecuador	15,924	3
Mt. Whitney	California	14,887	2¾
Mt. Fairweather	Alaska	14,500	2¾
Mt. Shasta	California	14,442	2¾
Mt. Ranier	Wash. Territ'y	14,444	2¾
Long's Peak, Rocky Mountains	Colorado	14,271	2⅔
Mt. Ararat	Armenia	14,320	2⅓
Pike's Peak	Colorado	14,216	2⅓
Mt. Ophir	Sumatra	13,800	2⅝
Fremont's Peak, Rocky Mountains	Wyoming	13,570	2⅝
Mt. St. Helens	Wash Territ'y	13,400	2½
Peak of Teneriffe	Canaries	12,182	2⅛
Miltzin, highest of Atlas Mountains	Morocco	11,500	2
Mt. Hood	Oregon	11,225	2
Mt. Lebanon	Syria	10,533	2
Mt. Perda, highest of Pyrenees	France	10,950	2
Mt. Ætna, volcano	Sicily	10,835	2
Monte Corno, highest of Appenines	Naples	9,523	1¾
Sneehattan, highest Dovrefield Mts	Norway	8,115	1½
Pindus, highest in	Greece	7,677	1½
Mount Sinai	Arabia	6,541	1¼
Black Mountain, highest in	N. Carolina	6,760	1¼
Mt. Washington, highest White Mts	N Hampshire	6,285	1¼
Mt. Marcy, highest in	New York	5,402	1
Mt. Hecla, volcano	Iceland	5,104	1
Ben Nevis, highest in Great Britain	Scotland	4,406	⅞
Mansfield, highest of Green Mountains	Vermont	4,280	¾
Peaks of Otter	Virginia	4,260	¾
Mt. Vesuvius	Naples	4,253	¾
Round Top, highest of Catskill Mts	New York	3,804	¾

ONE HORSE POWER is the strength necessary to lift 33,000 pounds one foot per minute.

THE NAVY OF THE UNITED STATES.

Fleet.

First Rate (battle ships), none built, 4 building	=	4
Second Rate (3.000 tons or over), 11 built, 12 building	=	[illegible]3
Third Rate (1,000 tons or over), 30 built, 6 building	=	36
Fourth Rate (gunboats less than 1,000 tons) 6 built, 1 bldg.	=	7
Torpedo Boats, 3 built, 1 building	=	4
Tugs, Freight Boats, etc, 12 built, 3 building	=	15
Sailing Ships, 6 built	=	6
Receiving Ships, 8 built	=	8
Unserviceable Ships, 8 built	=	8
Grand Total		111

ALPHABETICAL LIST OF THE 1st, 2d, 3d AND 4th CLASS SHIPS.

NAME.	CLASS.	TONS DIS-PLACE-MENT.	HORSE POWER.	PROPULSION.	GUNS.	CON-DITION.
Adams	3	1,375	550	Screw	....	Wood.
Alert	3	1,020	365	Screw	4	Iron.
Alliance	3	1,375	668	Screw	6	Wood.
Amphytrite	2	3,990	1,600	Twin screws	6	*Building.*
Atlanta	2	3,189	4,030	Screw	8	Steel.
Ajax	3	2,100	340	Screw	2	Iron.
Baltimore	2	4,600	10,064	Twin screws	10	Steel.
Bennington	2	1,700	3,436	Twin screws	6	Steel.
Boston	2	3,189	4,030	Screw	8	Steel.
Canonicus	3	2,100	340	Screw	2	Iron.
Catskill	3	1,875	340	Screw	2	Iron.
Charleston	2	4,040	6,666	Twin screws	8	Steel.
Chicago	2	4,500	5,084	Twin screws	14	Steel.
Cincinnati	2	3,183	10,000	Twin screws	11	*Building.*
Comanche	3	1,875	340	Screw	2	Iron.
Concord	3	1,700	3,405	Twin screws	6	Steel.
Detroit	3	2,000	5,400	Twin screws	10	*Building.*
Dolphin	3	1,485	2,440	Screw	2	Steel.
Enterprise	3	1,375	790	Screw	6	Wood.
Essex	3	1,375	505	Screw	6	Wood.
Iroquois	3	1,575	1,202	Screw	7	Wood.
Indiana	1	10,200	9,000	Twin screws	16	*Building.*
Jason	3	1,875	340	Screw	2	Iron.
Kearsarge	3	1,550	843	Screw	7	Wood.
Lancaster	2	3,250	7,333	Screw	10	Wood.
Lehigh	3	1,875	340	Screw	2	Iron.
Machias	3	1,050	1,600	Twin screws	8	*Building.*
Mahopac	3	2,100	340	Screw	2	Iron.
Maine	2	6,648	9,000	Twin screws	10	*Building.*
Manhattan	3	2,100	340	Screw	2	Iron.
Marion	3	1,900	753	Screw	8	Wood.
Massachusetts	1	10,200	9,000	Twin screws	16	*Building.*
Miantonomoh	2	3,990	1,426	Twin screws	4	Iron.
Michigan	4	685	305	Paddle	4	Iron.

United States Fleet—Alphabetical List—*Continued.*

NAME.	CLASS.	TONS DISPLACEMENT.	HORSE POWER.	PROPULSION.	GUNS.	CONDITION.
Mohican.........	3	1,900	613	Screw	10	Wood.
Monadnock.....	2	3,990	3,000	Twin screws	6	*Building.*
Montauk.........	3	1,875	340	Screw	2	Iron.
Monterey.........	2	4,138	5,400	Twin screws	4	*Building.*
Montgomery	3	2,000	5,400	Twin screws	10	*Building.*
Nahant..........	3	1,875	340	Screw	2	Iron.
Nantucket......	3	1,875	340	Screw	2	Iron.
Newark.........	2	4,083	8,869	Twin screws	12	Steel.
New York.......	2	8,150	1,6500	Twin screws	18	*Building.*
No. 1.........	3	2,183	4,800	Twin screws	....	*Building.*
No. 6.........	3	1,050	1,600	Twin screws	10	*Building.*
No. 6.........	2	5,500	13,500	Twin screws	14	*Building.*
No. 11.........	3	2,000	5,400	Twin screws	10	*Building.*
No. 12.........	2	7,350	21,000	Tripple scre's	11	*Building.*
No. 13.........	2	7,350	21,000	Tripple scre's	11	*Building.*
Oregon..........	1	10,200	9,000	Twin screws	16	*Building.*
Palos............	4	420	246	Screw	6	Iron.
Passaic..........	3	1,875	340	Screw	2	Iron.
Pensacola........	2	3,000	680	Screw	18	Wood.
Petrel...........	4	890	1,513	Screw	4	Steel.
Philadelphia.....	2	4,324	8,815	Twin screws	12	Steel.
Pinta............	4	550	190	Screw	4	Iron.
Puritan..........	2	6,000	3,700	Twin screws	10	Iron.
Raleigh.........	2	3,183	10,000	Twin screws	....	*Building.*
Ranger..........	3	1,020	365	Screw	....	Iron.
Richmond......	3	2,700	960	Screw	14	Wood.
San Francisco....	2	4,083	10,400	Twin screws	12	Steel.
Terror...........	2	3,990	1,600	Twin screws	4	*Building.*
Texas...........	1	6,300	8,600	Twin screws	8	*Building.*
Thetis...........	3	1,250	490	Screw	....	Wood.
Vesuvius........	4	930	3,795	Twin screws	3	Steel.
Yantic..........	4	900	225	Screw	4	Wood.
Yorktown.......	3	1,700	3,660	Twin screws	6	Steel.

Stations.

North Atlantic.—Philadelphia (Flag ship); Miantonomoh; Concord; Kearsarge; Vesuvius.

Pacific.—San Francisco (Flag ship); Pensacola; Charleston; Boston; Baltimore; Mohican; Iroquois; Yorktown.

Asiatic.—Lancaster (Flag ship); Marion; Alliance; Monocacy; Alert; Petrel; Palos.

South Atlantic.—Chicago; Atlanta; Bennington; Essex; Yantic.

Apprentice Training Ships.—Monongahela; Portsmouth; Jamestown.

Navy Yards.

Portsmouth, N. H.; Boston, Mass.; Newport, R. I.; New London, Conn.; League Island; Washington, D. C.; Norfolk, Va.; Brooklyn, N. Y.; Pensacola, Fla., Mare Island, Cal.

QUALIFICATIONS FOR VOTING IN EACH STATE OF THE UNION.

STATES.	VOTERS MUST BE MALES, 21 YEARS OLD, AND	PREVIOUS RESIDENCE REQUIRED.		
		State.	County.	Precinct.
Alabama	Citizens or have declared intentions.	1 year	3 months	1 month.
Arkansas.	Citizens or have declared intentions.	1 year	6 months	1 month.
California	Actual citizens	1 year	90 days	30 days
Colorado	Citizens or have declared intentions.	6 months		
Connecticut.	Actual citizens	1 year	6 months	6 months
Delaware	Actual county tax-payers.	1 year	1 month.	
Florida	United States citizens or have declared intentions.	1 year	6 months	
Georgia	Actual citizens	1 year	6 months	
Idaho	Citizens or have declared intentions.	6 months	30 days	
Illinois	Actual citizens	1 year	90 days	30 days
Indiana	Citizens or have declared intentions.	6 months	60 days	30 days
Iowa.	Actual citizens	6 months	60 days	
Kansas	Citizens or have declared intentions.	6 months		30 days
Kentucky	Free white male citizens.	2 years	2 years	60 days
Louisiana	Citizens or have declared intentions.	1 year	6 months	30 days
Maine	Actual citizens	3 months		
Maryland.	Actual citizens	1 year	6 months	
Massachusetts	Citizens	1 year		6 months
Michigan	Citizens or have declared intentions.	3 months		10 days
Minnesota	Citizens or have declared intentions.	4 months		10 days
Mississippi	Actual citizens.	6 months	1 month.	
Missouri.	Citizens or have declared intentions.	1 year.	60 days	
Montana.	Citizens of the United States.	1 year	30 days	30 days
Nebraska	Citizens or have declared intentions.	6 months		
Nevada	Citizens or have declared intentions.	6 months	30 days	
New Hampshire	Actual citizens.			Town 6 m.
New Jersey	Actual citizens	1 year	5 months	
New York	Actual citizens.	1 year	4 months	30 days

QUALIFICATIONS FOR VOTING, ETC.—CONTINUED.

STATES.	VOTERS MUST BE MALES, 21 YEARS OLD, AND	PREVIOUS RESIDENCE REQUIRED.		
		State.	County.	Precinct.
North Carolina	Actual citizens	12 months	90 days	
North Dakota	Citizens or have declared intentions	1 year	6 months	90 days
Ohio	Actual citizens	1 year		
Oregon	Citizens or have declared intentions	6 months		
Pennsylvania	Actual citizens	1 year		2 months
Rhode Island	Actual tax-paying citizens	1 year		Town 6 m.
South Carolina	Actual citizens	1 year	60 days	
South Dakota	Citizens or have declared intentions	6 months	6 months	30 days
Tennessee	Actual citizens	12 months	6 months	
Texas	Citizens or have declared intentions	1 year	6 months	6 months
Vermont	Aetual citizens	1 year		
Virginia	Actual citizens	12 months		Town 3 m.
Washington	Citizens of the United States	1 year	90 days	30 days
West Virginia	Actual citizens	1 year	60 days	
Wisconsin	Citizens or have declared intentions	1 year		
Wyoming	Citizens or have declared intentions	6 months	30 days	

Women are entitled to full suffrage in Utah and Wyoming. Twenty-nine States and Territories —a majority of the Union—have given women some form of suffrage (school, municipal, etc.)

REGISTRATION.—In California, Connecticut, Illinois, Iowa, Maine, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, Rhode Island, Vermont, Virginia and Wisconsin registration is required by law. In Colorado, Florida, Maryland, Mississippi, Nevada, North Carolina, Pennsylvania and South Carolina registration is a constitutional requirement. In Kansas and Missouri registration is required in cities only, in Ohio in the cities of Cincinnati and Cleveland only, and in New York and New Jersey in cities of 10,000 inhabitants and upward. In Alabama, Delaware, Georgia, Indiana, Kentucky, Louisiana and Tennessee no registration is required; and in Arkansas, Texas, and West Virginia it is prohibited by the State Constitution.

INTEREST LAWS AND STATUTES OF LIMITATIONS.

STATES AND TERRITORIES.	INTEREST LAWS.		STATUTES OF LIMITATIONS.		
	Legal Rate. *per ct*	Rate Allowed by Contract. *per ct.*	Judgments, Years.	Notes, Years.	Open Accounts, Years.
Alabama	8	8	20	6	3
Arkansas	6	10	10	5	3
Arizona	10	Any rate.	2	3	2
California	7	Any rate.	5	4	2
Colorado	10	Any rate.	6	6	6
Connecticut	6	6	17	17	6
Delaware	6	6	21	6	3
District of Columbia	6	10	12	3	3
Florida	8	Any rate.	20	5	3
Georgia	7	8	7	7	4
Idaho	10	18	6	5	4
Illinois	6	8	7	20	5
Indiana	6	8	20	10	6
Iowa	6	10	20	10	5
Kansas	7	12	5	5	3
Kentucky	6	10	15	15	2
Louisiana	5	8	10	5	3
Maine	6	Any rate.	20	6	6
Maryland	6	6	12	3	3
Massachusetts	6	Any rate.	20	6	6
Michigan	7	10	6	6	2
Minnesota	7	10	10	6	6
Mississippi	6	10	7	6	3
Missouri	6	10	5	10	5
Montana	10	Any rate.	6	6	2
Nebraska	7	10	5	5	5
Nevada	10	Any rate.	6	6	4
New Hampshire	6	6	20	6	6
New Jersey	6	6	20	6	6
New Mexico	6	12	15	6	4
New York *	6	6	20	6	6
North Carolina	6	8	10	3	3
North Dakota	7	10	20	6	6
Ohio	6	8	5	15	6
Oklahoma	7	12	....	....	....
Oregon	8	10	10	6	1
Pennsylvania	6	6	5	6	6
Rhode Island	6	Any rate.	20	6	6
South Carolina	7	Any rate.	10	6	6
South Dakota	7	12	20	6	6
Tennessee	6	10	10	6	6
Texas	8	12	15	4	2
Utah	10	Any rate.	5	4	2
Vermont	6	6	8	6	6
Virginia	6	8	10	5	2
Washington	10	Any rate.	6	6	3
West Virginia	6	6	10	10	3
Wisconsin	7	10	20	6	6
Wyoming	12	Any rate.	5	5	4

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* New York has, by a recent law, legalized any rate of interest on call loans of $5,000 or upward, on collateral security.

Principal Countries of the World—Population, Religion and Government.

COUNTRY.	Population.	Inhabitants to Sq. Mile.	Capital.	Prevailing Religion.	Form of Government
China (Estimated)*	303,241,969	93.7	Pekin	Buddhic	Empire
India	274,000,000	184.3	Calcutta	Hindoo	Empire
Russia (Est.)	108,787,214	13	St. Petersburg	Greek Church	Empire
United States†	62,622,250	18	Washington	Protestant	Republic
German Empire	49,421,065	227.1	Berlin	Protestant	Monarchy
Austria-Hungary	42,749,329	168.5	Vienna	Catholic	Monarchy
France	38.218,903	187.2	Paris	Catholic.	Republic
Japan	40,072,684	265	Tokio	Buddhic.	Empire
Great Britain‡	38,000,000	290	London	Protestant	Monarchy
Italy (Est.)	30,158,408	267.5	Rome	Catholic	Monarchy
Turkish Empire	32,500,000	20.2	Constantinople	Mohammedan	Monarchy
Spain	17,550,216	88	Madrid	Catholic	Monarchy
British America	5,000,000	1.2	Ottawa	Protestant	Monarchy
Brazil	14,000.000	4.3	Rio Janerio	Catholic	Republic
Mexico (Est.)	10,000,000	15.3	Mexico City.	Catholic	Republic
Belgium	6,030,042	530	Brussels	Catholic	Monarchy
Bavaria	5,589,382	182.7	Munich	Catholic	Monarchy
Sweden	4.478.675	27	Stockholm	Protestant	Monarchy
Persia (Est.)	7,653,600	13.2	Teheran	Mohammedan	Monarchy
Portugal	4.708,178	135.2	Lisbon	Catholic	Monarchy
Holland**	4,450,870	356	The Hague	Protestant	Monarchy
Colombia	3.500,000	9.9	Bogota	Catholic	Republic
Switzerland	2,933,334	184	Berne	Protestant	Confederation
Peru	3,000,000	6	Lima	Catholic	Republic
Australasia	3,935,494	1.2	Melbourne*†	Protestant	Monarchy

Chili (Est.)	2,665,000	9	Santiago	Catholic	Republic
Bolivia (Est.)	1,380,000	2.9	Sucre	Catholic	Republic
Denmark (Est.)	2,172.205	156.3	Copenhagen	Protestant	Monarchy
Wurtemberg	2,036,556	261.8	Stuttgart	Protestant	Monarchy
Norway	2.000,000	14	Christiania	Protestant	Monarchy
Venezuela	2,121,988	3.5	Caracas	Catholic	Republic
Argentine	3,000,000	3.6	Buenos Ayres	Catholic	Republic
Greece	2,187,208	87	Athens	Greek Church	Monarchy
Baden	1,656,817	272.1	Karlsruhe	Catholic	Grand Duchy
Guatemala	1,427,116	30.5	New Guatemala	Catholic	Republic
Ecuador	1,004,651	8.5	Quito	Catholic	Republic
Hesse	994,614	318.8	Darmstadt	Protestant	Grand Duchy
Liberia (Est.)	1,050,000	74.6	Monrovia	Protestant	Republic
Hayti (Est.)	500,000	94.1	Port au Prince	Catholic	Republic
Uruguay	687,194	9.5	Montevideo	Catholic	Republic
San Salvador	651,130	91.5	San Salvador	Catholic	Republic
Nicaragua (Est.)	310,000	7	Managua	Catholic	Republic
Honduras (Est.)	431,917	9	Tegucigalpa	Catholic	Republic
San Domingo	350,000	34	San Domingo	Catholic	Republic
Paraguay	440,000	5	Asuncion	Catholic	Republic
Costa Rica (Est.)	213,785	10.3	San Jose	Catholic	Republic
Hawaii (Est.)	86,647	12	Honolulu	Protestant	Monarchy

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*Includes Corea. †Includes the Territories. ‡Includes Ireland. **Includes Netherlands.

*† Australasia has seven organized colonies—New South Wales, Victoria, Queensland, South Australia, Western Australia, New Zealand and Tasmania. **The capital of Victoria is Melbourne.**

"'OSTLER JOE."

The recitation of the following poem by Mrs. James Brown Potter before a large and cultured audience at Washington, D.C., was the inspiration and starting point of that distinguished lady's career as an actress:

I stood at eve as the sun went down, by a grave where a woman lies,
Who lured men's souls to the shores of sin with the light of her wanton eyes;
Who sang the song that the siren sang on the treacherous Lurley height,
Whose face was as fair as a summer day, and whose heart was as black as night.

Yet a blossom I fain would pluck to-day from the garden above her dust—
Not the lauguorous lily of soulless sin, nor the blood-red rose of lust.
But a sweet white blossom of holy love that grew in the one green spot
In the arid desert of Phryne's life, where all was parched and hot.

In the summer, when the meadows were aglow with blue and red,
Joe, the 'ostler of the Magpie, and fair Annie Smith were wed.
Plump was Annie, plump and pretty, with a cheek as white as snow;
He was anything but handsome, was the Magpie's 'Ostler Joe.

But he won the winsome lassie. They'd a cottage and a cow
And her matronhood sat lightly on the village beauty's brow,
Sped the months and came a baby—such a blue-eyed baby boy!
Joe was working in the stables when they told him of his joy.

He was rubbing down the horses, and he gave them then and there
All a special feed of clover, just in honor of the heir.
It had been his great ambition, and he told the horses so,
That the Fates would send a baby who might bear the name of Joe.

Little Joe the child was christened, and, like babies, grew apace:
He'd his mother's eyes of azure, and his father's honest face.

Swift the happy years went over, years of blue and cloudless sky,
Love was Lord of that small cottage, and the tempest passed them by.

Passed them by for years, then swiftly burst in fury o'er their home.
Down the lane by Annie's cottage chanced a gentleman to roam;
Thrice he came and found her sitting by the window with her child,
And he nodded to the baby, and the baby laughed and smiled.

So at last it grew to know him—Little Joe was nearly four;
He would call the "pretty gemplin" as he passed the open door;
And one day he ran and caught him, and in child's play pulled him in:
And the baby Joe had prayed for brought about the mother's sin.

'Twas the same old wretched story, that for ages bards have sung,
'Twas a woman weak and wanton, and a villian's tempting tongue;
'Twas a picture deftly painted for a silly creature's eyes
Of the Babylonian wonders, and the joy that in them lies.

Annie listened and was tempted; she was tempted and she fell,
As the angels fell from heaven to the blackest depths of hell;
She was promised wealth and splendor, and a life of guilty sloth,
Yellow gold for child and husband, and the woman left them both.

Home one eve came Joe the 'Ostler with a cherry cry of "Wife!"
Finding that which blurred forever all the story of his life.
She had left a silly letter—through the cruel scrawl he spelt;
Then he sought the lonely bedroom, joined his hands and knelt.

"Now. O Lord, O God, forgive her, for she ain't to blame," he cried;
"For I owt t' a seen her trouble, and 'a gone away and died.

Why, a wench like her—God bless her!—'twasn't likely as her'd rest
With her bonny head forever on a 'ostler's ragged vest.

"It was kind o' her to bear me all this long and happy time;
So, for my sake please to bless her, though you count her deed a crime.
If so be I don't pray proper, Lord, forgive me; for you see,
I can talk all right to 'osses, but I'm nervous like with Thee."

Never a line came to the cottage from the woman who had flown.
Joe, the baby, died that winter, and the man was left alone.
Ne'er a bitter word he uttered, but in silence kissed the rod,
Saving what he told the horses, saving what he told his God.

Far away in mighty London rose the woman into fame,
For her beauty won men's homage, and she prospered in her shame;
Quick from lord to lord she flitted, higher still each prize she won,
And her rival paled beside her as the stars beside the sun.

Next she made the stage her market, and she dragged Art's temple down.
To the level of a show-place for the outcasts of the town.
And the kisses she had given to poor 'Ostler Joe for nought
With their gold and costly jewels rich and titled lovers bought.

Went the years with flying footsteps while the star was at its height;
Then the darkness came on swiftly, and the gloaming turned to night.
Shattered strength and faded beauty tore the laurels from her brow;
Of the thousands who had worshiped never one came near her now.

Broken down in health and fortune, men forgot her very name,
'Till the news that she was dying woke the echoes of her fame;
And the papers in their gossip mentioned how an "actress" lay
Sick to death in humble lodgings, growing weaker every day.

One there was who read the story in a far-off country place,
And that night the dying woman woke and looked upon his face;
Once again the strong arms clasped her that had clasped her long ago,
And the weary head lay pillowed on the breast of 'Ostler Joe.

All the past had he forgotten, all the sorrow and the shame;
He had found her sick and lonely, and his wife he now could claim.
Since the grand folks who had known her one and all had slunk away,
He could clasp his long-lost darling, and no man can say him nay.

In his arms death found her laying, in his arms her spirit fled;
And his tears came down in torrents as he knelt beside her dead.
Never once his love had faltered through her base unhallowed life;
And the stone above her ashes bears the honored name of wife.

That's the blossom I fain would pluck to-day from the garden above her dust;
Not the languorous lily of soulless sin or the blood-red rose of lust;
But a sweet, white blossom of holy love that grew in the one green spot
In the arid desert of Phryne's life, where all was parched and hot.

GEORGE R. SIMS.

SOME FAMOUS FIRES.

1106—The island city of Venice was almost destroyed by fire. Before that time the city was built of wood, after that principally of stone.

1212—The central districts of London were totally destroyed by fire.

1700—Over one-half of the City of Edinburgh was destroyed by fire.

1728—Copenhagen suffered severely from a great fire, in which 1,650 houses were burned, and the busidess portion of the city entirely destroyed.

1729—Over 12,000 houses were burned in Constantinople and 7,000 lives were lost in the fire. In 1745 a fire again raged in the Turkish capital during five days, and a series of terrible conflagrations also occurred in the year 1750.

1736—Over 2,000 houses were burned in St. Petersburg.

1751—Stockholm was visited by a fire which destroyed 1,000 houses, and in 1759 another fire, in the same city, ruined 250 houses and stores.

1758—The town of Christiana was almost destroyed, property exceeding $1,000,000 in value being blotted out.

1784—An explosion and fire occurred in the government dock yards at Brest, France, which occasioned a loss of $5,000,000.

1802—Enormous conflagration at Liverpool, which destroyed more than $5,000,000 worth of property.

1805—St. Thomas was devastated by fire, government and other property to the value of $30,000,000 was destroyed.

1808—Spanish Town was blotted out by a terrible conflagration, which destroyed property estimated to exceed $7,500,000 in value.

1835—The great fire of New York destroyed property to the value of $15,000,000.

1838—Charleston, S. C., was swept by a fire. It is estimated that on this occasion 1,158 buildings were destroyed, whose value was $3,000,000.

1841—Smyrna was visited by a conflagration which destroyed 12,000 houses. The buildings destroyed were light wooden structures, and a fire once kindled in a town of frame buildings closely crowded together is almost impossible to subdue

1842—Hamburg was burned; 4,219 buildings were destroyed, their estimated value being $35,000,000; 100 lives were lost by falling walls and similar accidents.

1845—A great fire occurred in New York, in which thirty-five lives were lost and $7,509,000 worth of property consumed.

1845—The lower portion of Pittsburg was blotted out by a fire, which speedily passed beyond the control of the defective apparatus then employed. On this occasion there were 1,100 buildings burned, whose value was $10.000,000.

1848—Albany, N. Y., was visited by a fire which destroyed 600 houses, their value being $3,000.000.

1848—A great fire raged in Constantinople along the shores of the Golden Horn. It is said that on this occasion 2,500 dwellings, shops and bazaars were destroyed, their value being estimated at $15,000,000.

1852—Montreal suffered from fire. in which 1,200 residences and stores were blotted out of existence, the property loss exceeding $5,000,000.

1862—Valparaiso, in Chili, was almost totally destroyed by fire.

1862—The prosperous city of Troy, N. Y., was almost blotted out by fire.

1862—The business portion of St. Petersburg was seriously damaged by fire, the property loss exceeding $5,000,000.

1864—Nini Novgorod, in Russia, was almost obliterated by fire. All the buildings and bazaars in which were held the great annual fair of merchants from all parts of Europe and Asia were blotted out, and that year most of the trading was done in tents or temporary structures

1865—Fire in Constantinople which destroyed 2,800 buildings, shops and bazaars.

1865—Carlstadt, Sweden, was destroyed by fire, and it was noted as a singular circumstance that all the buildings in the town were consumed except the bishop's palace, the city hospital and the jail.

1866—A great fire occurred in Quebec, in which 2,500 dwellings and seventeen churches were destroyed.

1866—Portland, Me., suffered from a great fire, which destroyed over half the buildings in the city and occasioned a loss of $11,000,000.

1870—Constantinople's greatest fire occurred, when almost half the peninsula on which the city is built was swept by the conflagration. No record exists of the number of houses destroyed on this occasion, but the value of the property lost was roughly estimated to exceed $26,000,000.

1871—The Chicago fire, October 9th, whether considered with regard to the area of land covered, the number of lives lost, or the value of the property destroyed, ranks as the greatest of history. Over 18,000 buildings were destroyed, of which 2400 were stores, shops or factories, and about 100,-

000 people were rendered homeless by the burning of their houses. The district over which the conflagration swept was three and three-fourths miles in length by more than a mile wide, covering the most densely peopled portion of the city. It is said that 250 lives were lost by accidents during the progress of the fire, and the total value of the property was estimated at $192,000,000, this estimate not including over $4,000,000 allowed for salvage on foundations and the like. Scores of fire insurance companies were forced to the wall by this terrible calamity. The cash contributions for the benefit of the sufferers of the Chicago fire amounted, within a month after the disaster, to $4,200.000, and the contributions in the way of supplies, food, clothing and other necessaries to perhaps as much more.

1871—The Paris fires during the reign of the Commune in May, destroyed a frightful amount of property, including the Hotel de Ville and Tulleries Palace and many buildings of less prominence. It is estimated that the total value of the property ruined by the incendiary fires, kindled by members of the Commune, exceeded $160,000,000.

1872—The Boston fire is reckoned the fourth most destructive fire of history, the loss exceeding $75,000,000. One peculiarity of this conflagration was the fact that buildings supposed to be fire-proof were consumed as readily as those for which their builders made no such claim.

1877—St. John, N. B., suffered from a fire which destroyed $12,500,000 worth of property.

1873—Yeddo, Japan. suffered from a fire, which destroyed 10.000 houses and left over 1,000,000 persons homeless.

1877—Riots and fires in Pittsburg, in which over $3,000,000 worth of property was destroyed.

1889—Great fire at Seattle, Wash., in which property to the value of $20,000.000 was destroyed.

1896—In May. fire did considerable damage, and added greatly to the horrors of the tornado at St. Louis, Mo., and East St. Louis, Ill. Losses well up in the millions; exact figures not yet obtainable.

IMPORTANT EVENTS OF THE LATE CIVIL WAR.

Casualties, etc.

1861.

April 12th—The first shot of the Rebellion was fired at Fort Sumter, by order of General Beauregard (Pierre Gustave Toutant) at 4:30 a. m.

April 15th—President Lincoln issues a proclamation calling for 75,000 volunteers to put down the rebellion, and orders all rebels to return to loyalty in twenty days.

May 3d—President Lincoln calls for 42,000 three years' volunteers, 22,000 troops for regular army service, to serve during the war, and 18,000 men for the navy.

June 4th—Harper's Ferry is evacuated by the Confederates.

June 20th—General McClellan is appointed Commander of the army in western Virginia.

July 1st—United States asks for a war loan of $250,000-000.

July 21st—Battle of Bull's Run.

July 22d—General McClellan takes command of the Army of the Potomac.

November 1st—McClellan becomes Commander-in-Chief of the armies of the United States.

November 18th—The Confederate Congress meets at Richmond.

November 30th—Jefferson Davis is elected President of the Confederate States for a term of six years.

1862.

February 16th—General Grant captures Fort Donelson.

February 22d—Jefferson Davis is inaugurated President of the Confederate States, at Richmond, with A. H. Stephens as Vice-President.

February 23d—Nashville, Tenn. is captured by General Grant.

April 6th—Battle at Pittsburg landing; General Grant is driven from his position.

April 7th—General Grant regains his position. The valiant General Johnstone was killed in this battle.

April 24th—New Orleans was taken by a double force. The naval force under Commodore Farragut, aided by a land force under General Butler.

May 1st—General Butler enters New Orleans and proclaims martial law.

July 1st—President Lincoln calls for 300,000 volunteers.

August 8th—The Habeas Corpus Act is suspended.

1862.

September 1st—Battle of Chantilly is fought in a thunder-storm. General Kearney is killed.

September 5th—General Lee crosses the Potomac and marches to Frederic.

September 22d—President Lincoln issues his famous Proclamation of Emancipation.

1863.

January 1st—Emancipation Proclamation takes effect. 3,120,000 slaves are made free.

March 12th—The Conscription Act is passed, giving the President about 4,000,000 of men on whom he may call for service.

April 1st—Admiral Farragut makes his heroic march past the Gulf batteries.

April 6th—The market prices of Richmond of this date, show the value of common commodities: Apples, $50 per bbl.; butter, $3 per lb.; round of bacon, $1.40; ham, $1.45; brandy and whiskey, $22 to $30 per gal.; corn, $7.50 per bu.; candles, $3 per lb.; coffee, $4.50 per lb.; flour, $32 to $36 per bbl.; sugar, $1.30 per lb.

May 2d—Battle of Chancellorville.

May 10th—"Stonewall" Jackson dies.

July 1st—The awful battle of Gettysburg, the most stubbornly fought of the war begins. This was the turning point of the great conflict.

July 4th—The battle of Gettysburg ends. Vicksburg surrenders.

November 24th—Battle of Lookout Mountain.

1864.

March 9th—General Grant becomes Lieutenant-General in command of all the armies.

June 16th—The "Alabama" attacked by the "Kearsarge" and sinks off Cherbourg, France.

September 19th--Battle of Winchester. Sheridan captures 5,000 prisoners and all the guns.

November 8th—Abraham Lincoln is re-elected President with the electoral vote of twenty-two states. 213 votes in all.

November—General Sherman commences his grand march from Atlanta to the sea.

1865.

February 7th—General Lee assumes supreme control of all the Confederate forces.

March 25th—Battle of Five Forks begins.

April 8th—Lee surrenders to General Grant at the Appomattox Court House.

April 12th—The Union Flag waves once more above Fort Sumter.

DATE.	APRIL, 1861.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P–M	K.	W.	P–M
12	Bombardment of Fort Sumter. No casualties..........						
15	Evacuation of Ft. Sumter, S.C.	1	3				
19	Riots in Baltimore, Md.......	4	20		9		
	MAY.						
2	N. Y. 69th Regment arrived in Washington................						
5	Gen. Butler took possession of Relay House............						
10	Camp Jackson, Mo...........						639
10	Riots in St. Louis, Mo........	4			27		
11	Charleston blockade establs'd						
17	C. S. Cong. authorized issue of $50,000,000 8% 20-year bonds						
29	Pres't Davis reached Richm'd						
31	Cavalry skirmish at Fairfax C. H. Va....................						
	JUNE.						
1	Fairfax Court House, Va.......	1	4		1	14	
3	Phillippi, West Virginia......		2			16	
10	Big Bethel, Va................	16	34		1	7	
11	*Romney, West Virginia......		1		2	1	
14	Confederates evacuate and burn Harper's Ferry, Va....						
17	Vienna, Virginia..............	5	6		6		
17	*Boonville, Mo...............	2	19		15	20	
17	Edward's Ferry. Md..........	1	4		15		
18	Camp Cole, Mo..............	15	52		4	20	
23	48 B. & O. R. R. loccmotives, valued at $400,000, destroyed by the Confederates........						
26	Patterson Creek, Va..........	1	1		7	2	
27	Matthias' Point, Va...........	1	4				
29	General council of war held at Washington.................						
	JULY.						
2	Falling Waters, Md...........	8	15		31	50	
5	*Carthage, or Dry Forks, Mo.	13	31		40	125	45
5	Newport News................		6			6	
5	President Lincoln called for 400,000 men and $400,000,000 to put down the rebellion...						
6	Middle Creek Fork, W. Va...	1	6		7		
7	Great Falls, Va...............	2			12		
8	Laurel Hill, W. Va............	2	6				
10	Monroe Station, Mo..........	3			4	20	75
11	*Rich Mt., Va. (Camp lost and						

DATE.	JULY, 1861.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P-M	K.	W.	P-M
	150 prisoners taken.)........	11	35		60	140	100
12	Barboursville, or Red House, Va...........................	1			10		
13	Beverly, W. Va................						600
14	Carrick's Ford, W. Va.........	13	40		20	10	50
16	Millsville, or Wentzville, Mo.	7	1		7		
17	Fulton, Mo.....................	1	15				
17	Scarrytown, W. Va...........	9	38				
17	Martinsburg, Mo..............	1	1				
17	Bunker Hill, Va......				4		
18	Blackburn's Ford, Va........	19	38		15	53	
19	Harrisonville and Parkersville, Mo....................	1			14		
21	†Bull Run, or Manassas, Va...	481	1011	1460	269	1483	
22	Forsyth, Mo..................		3		5	10	
24	Blue Mills, Mo................	1	12				
26	Lane's Prairie, near Rolla, Mo.		3		1	3	
27	Ft. Fillmore, New Mexico....			420			
	AUGUST.						
2	Dug Springs, Mo..............	4	37		40	44	
3	Messilla, New Mexico........	3	6		12		
5	Athens, Mo....................	3	8		14	14	
5	Point of Rocks, Md...........				3	2	
7	Hampton, Va..................				3	6	
8	*Lovettsville, Va..............				1	5	
10	*Wilson's Creek, Mo. (Gen. Lyon killed.)...............	223	721	291	205	800	30
11	Potosi, Mo.....................	1			2	3	
14	Martial law declared at St. Louis, Mo..................						
17	Brunswick, Mo...............	1	7				
19	Charleston, or Bird's Pt., Mo.	1	6		40		
20	*Hawk's Nest, W. Va.........		3		1	3	
26	Cross Lanes, or Somerville, W. Va.......................	5	40	200			
27	Ball's Cross Roads, Va.......	1	2				
28–9	*Ft. Hatteras, N. C...........	1	2		5	51	715
29	Lexington, Mo................				8		
31	Munson's Hill, Va............	2	2				
	SEPTEMBER.						
1	Bennett's Mills, Mo..........	1	8				
1	Boone Court House, W. Va...		6		30		
2	Dallas, Mo....................	2					
2	Dry Wood, or Ft. Scott, Mo..	4	9				
2	Beher's Mills, Mo............				3	5	
6	Paducah, Ky., occupied by Union forces................						

DATE.	SEPTEMBER, 1861	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P–M	K.	W.	P–M
10	Carnifex Ferry..................	16	102				
11	Lewinsville, Va................	6	8				
12	Black River, near Ironton, Mo.				5		
13	Cheat Mountain, W. Va.......	9	12			80	
13	Booneville, Mo...............	1	4		12	30	
14	Confed. privateer Judah destroyed near Pensacola, Fla.	3	15				
15	Pritchard's Mills, Va.........	1			8	75	
12–	20. †Lexington, Mo..........	42	108	1624	25	75	
17	Morristown, Mo...............	2	6		7		
17	Blue Hills, Mo................	11	39		10	60	
18	Banks of New Orleans suspend specie payment........						
18	Barbourville, W. Va..........	1	1		7		
21	†Ball's Bluff, Va. (Col. Baker killed.)......................	220	266	500	36	264	2
22	Poppinsville, or Osceola, Mo.	17					
22	Elliott's Mills, Mo............	1	5				
23	*Romney, or Hanging Rock, W. Va......................	3	50		35		
25	Chapmansville, W. Va........	4	9		20	50	
26	Lucas Bend, Ky......				4		
29	Munson's Hill	9	25				
	OCTOBER.						
3	Grienbrier, W. Va	8	32		100	75	
4	Ft. Craig, New Mexico........				11	30	
4	Buffalo Hill, Ky..............	20			50		
8	Hillsboro, Ky..................	3	2		11	29	
9	Santa Rosa, Fla...............	14	29			350	
12	Cameron, Mo..................	1	4		8		
12	Upton Hill, Ky................				5	3	
12	Bayles Crossroads, La........		4				
13	Beckwith Farm, Mo...........	2	5		1	2	
13	West Glaze, Mo...............				62		
15	Big River Br'ge, nr. Potosi, Mo.	1	6	33	5	4	
15	Lime Creek, Mo..............				63	40	
16	Bolivar Heights, Mo..........	4	7				
16	Warsaw, Mo..................				3		
17–	21. Fr'd'ckst'n and I'nton, Mo.	6	60			200	
19	Big Hurricane Creek, Mo.....	2	14		14		
21	Bell's Bluff; called Edwards Ferry, or Har'sn's Ln'dg, Va.	223	226	445	36	264	
22	Buffalo Mills, Mo............				17		
23	West Liberty, Ky.........		2		10	5	
23	Hodgeville, Ky...............		3		3	5	
25	Zagonyi's ch'ge, Spr'gfield, Mo.	18	37		100		
26	Romney, or Mill Creek, W. Va.	2	15		20	15	50

DATE.	OCTOBER, 1861.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P–M	K.	W.	P–M
26	Saratoga, Ky.		4		8	17	
27	Plattsburg, Mo.				8		
27	Spring Hill, Mo.		5				
29	Woodbury and Morgant'n, Ky.		1				
	NOVEMBER.						
1	Winfield Scott, Com. U. S. army, retired, and Maj.-Gen. Geo. B. McClellan app'nted..						
1	Renick, Randolph Co., Mo....		14				
6	Little Santa Fe, Mo.	2	6				
7	*Belmont, Mo.	90	173	235	261	427	378
7	Galveston Harbor, Tex.	1	8			3	
7	*Port Royal, S. C.	8	23		11	39	
9	*Piketown, or Fry Mtn., Ky. (70 wagons, stores, and eq'p'gs.)	4	26		18	45	200
10	Guyandotte, W. Va.	7	20		3	10	
10	Gauley Bridge, W. Va.	2	16				
11	Little Blue, Mo.	7	9				
12	Occoguan Creek, Va.	3	1				
17	Cypress Bridge, Ky.	10	15				
18	Palmyra, Mo.				3	5	
19	Wirt Court House, W. Va.....				1	5	
19	Eng. packet Trent boarded by Capt. Wilkes, and Mason and Slidell captured. On the 24th inst. they were placed in Ft. Warren, Boston Harbor; released Jan. 1, 1862, on a demand of the British govt....						
23	Ft. Pickens, Pensacola, Fla...	5	7		5	23	
24	Lancaster, Mo.	1	2		13		
26	Little Blue, Mo.	1	1				
26	Drainesville, Va.				2		
29	Black Walnut Creek, Mo.....		15		17		
	DECEMBER.						
3	Salem, Mo.	6	10		16	20	
3	Vienna, Va.				1		
4	Anandale, Va.	1			17		
4	Dunksburg, Mo.; citizens repulse raiders.				7	10	
9	Congress passed bill authoriz'g exchange of prisoners.......						
10	Shelling of Free Stone Point by Union gunboats.						
11	Bertrand, Mo.						
13	Camp Allegheny, or Buffalo Mt., W. Va.	20	107		20	96	

DATE.	DECEMBER, 1861.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P-M	K.	W.	P-M
17	Rowlett's Station, Ky.........	10	22		33	50	
18	*Milford, Blackwater, Mo.....	2	8				1300
20	Drainsville, Va................	7	61			43	143
21	Hudson, Mo....................		5		10		
22	Wadesburg, Mo................		2				
28	Sacramento, Ky...............	1	8		30		
28	Mt. Zion, Mo..................	5	63		25	150	
30	Banks of New York, Philadelphia, Albany, and Boston suspend specie payment........						
	JANUARY, 1862.						
1	Port Royal, S. C..............	1	10				
4	Huntersville, Va...............		1		1	7	
4	Near Bath, Va.................	2	2			30	
4	Calhoun, Mo...................		10			30	
7	Blue Gap, near Romney, Va..				15		
7	Jennie's Creek, Ky............	3	1		6	14	
8	Charleston. Mo................	8	16				
8	Dry Forks, W. Va.............		6		6		
8	Silver Creek, Mo..............	5	6			80	
9	Columbus, Mo.................	5					
10	Middle Creek, Ky.............	2	25		40		
19–	20. *Mill Springs, Ky. (Gen. Zolicoffer killed)...........	38	194		100	160	
22	Knob Noster, Mo..............	1					
29	Occoguan Bridge, Mo.........	1	4		10		
	FEBRUARY.						
1	Bowling Green, Ky............	3	2				
6	*Fort Henry, Tenn............		40		5	11	
8	Linn Creek, Va.........	1	1		8	7	
8	*Roanoke Island, N. C. (Surrender of Ft. Henry, Tenn., to Federal army.............	35	200		16	39	2527
10	Elizabeth City, N. C..........	3					
13	Blooming Gap, Va............	2	5		13		
14	Flat Lick Fords, Ky...........				4	4	
14–	15, 16. *Ft. Donelson, Tenn. (6 forts, 65 guns, and 17,500 small arms captured, and 13,829 Conf. w. and m.)......	446	1735	150	231	1007	
17	Pea Ridge, Mo.................	5	9				
18	Independence, Mo............	1	3		4	5	
21	Ft. Craig, New Mexico........	62	140			150	
24	Mason's Neck, Va............	2	1				
26	Keytersville, Mo..............	2	1		1		
	MARCH.						
2	Pittsburg Landing, Tenn......	5	5		20	200	

DATE.	MARCH, 1862.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P–M	K.	W.	P–M
3	New Madrid, Mo	1	3				
5	Occoguan, Va	2	2				
6–	7, 8. *Pea Ridge, Ark	203	972	174	1100	2500	1600
7	Fox Creek, Mo		5				
8	Near Nashville, Tenn	1	2		4		
9	Mountain Grove, Mo	10	2				
9	Hampton Roads, Va	261	108		7	17	
10	Burke's Station, Va	1			3	5	
10	Jacksb'o, Big Creek Gap, Tenn.		2		2	4	
11	Paris, Tenn	5	5			10	
12	Lexington, Mo	1	1		9	3	
12	Near Lebanon, Mo				13	5	
13	New Madrid, Mo		50			100	
14	*Newberne, N. C	91	466		64	106	413
16	Black Jack Forest, Tenn		4				
18	Salem, or Spring River, Ark	5	10		100		
21	Mosquito Inlet, Fla	8	8				
22	Independence, Mo	1	2		7		
23	Carthage, Mo		1				
23	*Winchester, Va. (Gens. McIntosh, McCulloch and Slack killed)	103	440	24	80	342	269
26	Warrensburg, Mo	1	22		9	17	
26	Humonsville, Mo		5			15	
26–	27, 28. Near Santa Fe, N. M.	32	75	35	36	60	93
28	Warrensburg, Mo	3	1		15		
	APRIL.						
2	Putnam's Ferry, Mo				3		
4	Great Bethel, Va	4	10				
4	Crump's Landing, Tenn		2			20	
6–7	*Shiloh, or Pittsb'g Ld'g, Tenn.	1735	7882	39,0	1728	8012	959
8	*Island No. 10, Tenn. (6 forts captured)				17		6000
8	Near Corinth, Miss				15	25	200
9	Owens River, Cal	1	2				
10	*Ft. Pulaski, Ga	1				4	360
11	Huntsville, Ala						200
11	Yorktown, Va	2	8				
12	Little Blue River, Mo				5		
12	Monterey, Va		3				
14	Pollocksville, N. C					7	
14	Diamond Grove, Mo		1				
14	Walkersville, Mo	2	3				
14	Monta Vallo, Mo	2	6		2	10	
15	Pechach's Pass, Ariz	3	3				
16	Savannah, Tenn				5	65	
16	Wilmington Island, Ga	10	35		5	7	

DATE.	APRIL, 1862.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P-M	K.	W.	P-M
16	Lee's Mills, Va.................	35	129		20	75	50
17	Holly River, W. Va...........		3		2		
18	Falmouth, Va.................	5	16				19
18	Edisto Island, S. C............		3				
18–	28. Fts. Jackson and St. Phillip and the capture of New Orleans, La....................	36	193		185	197	400
19	Talbot's Ferry, Ark...........	1			3		
19	Camden. N. C.................	12	98		6	19	
23	Grass Lick, W. Va............	3					
25	Ft. Macon, N. C...............	1	11		7	18	450
26	Turnback Creek, Mo..........	1					
26	Neosha, Mo....................	3	3			30	62
26	Com. Farragut demanded the surrender of New Orleans..						
26	In front of Yorktown, Va......	3	16				
27	Norton's Mills, N. C........	1	6			3	
28	Paint Rock R.R. Bridge, Tenn.	7					
28	Cumberland Mountain, Tenn.						
28	Monterey, Tenn...............	1	3		5		
29	Bridgeport, Ala......				72		350
	MAY.						
	New Orleans capt'd by Union soldiers						
1	Clarke's Hollow, West Va.....	1	21				
3	Farmington, Miss.............	2	12		30		
4	Licking, Mo....................	1	2				
4	Cheese Cake Church, Va......						
5	Lebanon, Tenn................	6	25				66
5	Lock Ridge Mills, Ky.........	4	16	68			
5	*Williamsburg, Va............	450	1400	372	1000		
7	West Point, Va................	40	104	41			
7	Somerville Heights, Va.......	2	7	24			
8	McDowell or Bull Pasture, Va.	28	225		100	200	
8	Corinth, Miss......	1	4		30		
9	Elk Station, Ala...............	5		43	16		
9	New Kent C. H., Va...........	4	3		10	14	
10	Port Pillow, Tenn.............		3		2	1	
10	Surrender of Norfolk, Va.....						
10	Gen. Butler captured $800,000 in Gold at New Orleans.....						
11	Bloomfield, Mo................			1			
13	Monterey, Tenn................		2		2	3	
15	Linden, Va.....................	1	3	14			
15	Fort Darling, James River, Va.	12	14		7	8	
15	Clalk Bluff, Mo................	1	3				
15	Butler, Bates Co., Mo.........	3	1				

DATE.	MAY, 1862.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P-M	K.	W.	P-M
15-8	Princeton, West Va.....	30	70		2	14	
17	Corinth, Miss.................	10	39		12		
19	Searcy Landing, Ark...... ...	18	17		150		
19	Clinton, N. C..................		5		9		
21	Phillips Creek, Miss		3				
22	Florida, Mo....................		2				
22	Near Newberne, N. C.........	3	8				
23	Louisburg, Va.................	14	60		40	60	100
23	Front Royal, Va................	32	122	750			
23	Backton Station, Va..........	2	6		12		
23	Ft. Craig, New Mexico.... ...		3				
24	New Bridge, Va...............	1	10		60		27
24	Chickahominy, Va............	2	4				
25	†Winchester, Va. (Fed. retr'd.)	38	155	711			
27	Hanover Court House, Va....	53	344		200		730
27	Big Indian Creek, Ark........		3		5	25	
27	Osceola, Mo.........	3	2				
28	Wardensville, Va.............				2	3	
29	Pocotaligo, S. C	2	9				
30	Booneville, Miss..............						2000
30	Front Royal, Va...............	5	8				156
30	*Corinth, Miss................						
31	Neosho, Mo...................	2	3				
31	Near Washington, N. C.......		1		3	2	
31	And						
	JUNE.						
1	†Seven Pines and Fair Oaks, Va....	800	3627	1222	2800	3807	1300
2	Strasburg, Va................		2				
3	Legare's Point, S. C..........		5				
4	Jasper, Tenn..................	2	7		20	20	
4	Blackand, Miss...............	5	14				
5	Tranter's Creek, N. C.........	7	11				
6	Memphis, Tenn. (Memphis surrenders)....................				80	80	100
6	Harrisonburg, Va.............			63	17	50	
8	† Cross Keys, Va..............	125	500		42	230	
9	† Port Republic, Va...........	67	364	574	88	335	34
10	James Island, S. C...........	3	13		17	30	
11	Monterey, Ky.................	2					100
12	Waddell's Farm, Ark..........	12			28		
13	Old Church, Va...............				1		
13	James Island, S. C...........	3	19		19	6	
14	Turnstall Station, Va.........	4	8				
16	Ft. Johnson, James Isl'd, S. C.	85	472	128	51	144	
17	St. Charles, Ark..............	105	30			155	
17	Warrensburg, Mo.............	2	2				

DATE.	JUNE, 1862.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P-M	K.	W.	P-M
17	Smithville, Ark................	2	4			4	15
18	Williamsburg Road, Va.......	7	57		5	9	
21	Battle Creek, Tenn...........	4	3				
22	Raceland, La..................	3	8				
23	Raytown, Mo...................	1	1				
25	Oak Grove, Va.................	51	401	64	65	495	11
25	Germantown, Tenn...........	10					
25	Little Red River, Ark.........		2				
26	*Chickahominy, Va...........	80	150		1000		
27	†Gaines Mills, Va........... .	7500	k w	& m	7500	k w	& m
26–	29. U. S. fleet under Com. Farragut; no casualties rec'rd'd.						
26	to July 1. *Malvern Hill, Va.	1000	k w	& m	5000	k w	& m
	President Lincoln calls for 600,000 men. The seven days' retreat of the Army of the Potomac under Gen. Geo. B. McClellan; total casualties in the various engagements were: 1st corps.............	253	1240	1581			
	2d corps...................	187	1076	848			
	3d córps...................	189	1051	833			
	4th còrps..................	69	507	201			
	5th corps..................	620	2460	1198			
	6th corps..................	245	1313	1179			
	Engineer's corps..........		2	21			
	Total......................	1582	7709	5958			
	Total casualties in Confed. divisions were 14,011 w....				2820		752
	JULY.						
1	Booneville, Miss.............	45			17	65	
1	Morning Sun, Texas..........		4		11	26	
3	Elvington Heights, Va........	8	32		100		
6	Grand Prairie, Ark........ ...	1	21		84		
7	Bayou Cache, La.............	7	57		110	200	
8	Black River, Mo..............	1	3				
9	Hamilton, N. C................	1	20				
9	Aberdeen, Ark................						
9	Thompkinsville, Ky...........	4	6		10		
11	Williamsburg, Va.............				3		
11	Pleasant Hill, Mo.............	10	19		6	5	
12	Lebanon, Ky. (Morgan's raid).	2		65			
12	Near Culpepper, Va..........				1	5	
13	Murfreesboro, Tenn..........	33	62	800	50	100	
14	Batesville, Ark................	1	4				
15	Apache Pass, Ariz............		1				
15	Fayetteville, Ark..............						150

DATE.	JULY, 1862.	CASUALTIES.					
		UNION			CONFED.		
		K.	W.	P-M	K.	W.	P-M
15	Decatur, Tenn................		4				
17	Cynthiana, Ky. Morgan's raid. Postage stamps made legal tender.....................	17	34		8	29	
18	Memphis, Mo................	13	35		23		
18	Guerrilla campaign in Mo. to Sept. 20. (Morgan's guerrillas scattered)...............	77	156	347	500	1800	560
23	Florida, Mo...................		22		3		
23	Columbus, Mo.................		2				
24	Trinity, Ala....................	2	11		12	30	
24	Near Florida, Mo.............	1	2		1	12	
25	Courtland Bridge, Mo.........			100			
26	Young's Crossroads, N. C.....		7		4	13	
28	Moore's Mills, Mo............	19	21		30	100	
29	Brownsville, Tenn............	4	6		4	6	
30	Paris, Ky.......................				27	39	
31	Coggin's Point, Va............	10	15		10	6	
	AUGUST.						
1	Newark, Mo..................	4	4	60	73		
2	Orange Court House, Va......	4	12		12		52
2	Clear Creek, Mo..............	5	14		11		
3	Languelle Ferry, Ark..........	17	38				
4	President Lincoln ordered 300,000 men to be drafted.......						
4	Sparta, Tenn..................					10	23
5	*Baton Rouge, La. (Gen. Williams killed)......	82	255	34	84	316	76
5	Malvern Hill, Va...............	3	11				100
6	Kirksville, Mo................	28	60		128	200	
6	Thornburg, Va................	2	12	72			
6	Tazewell, Tenn...............	3	23	50	9	40	
7	Trenton, Tenn................				30	20	
9	Stockton, Mo.................				13	36	
9	*Cedar Mountain, Va. (Conf. repulsed).......	450	660	290	229	1047	31
9	Nucces River, Tex............	40			8	14	
10	to 13. Grand River skirmishes, Mo. Total.................	100					
11	Independence, Mo............	14	18	312			
12	Gallatin, Tenn............ ..	30	50	200	6	18	
13	Clarendon, Ark...............						700
15	Merriweather's Ferry, Tenn..	3	6		20		
16	Lone Jack, Mo................	60	100		110		
19	Clarksville, Tenn.............			200			
20	Edgefield Junction, Tenn.....	8	18				
22	†Gallatin, Tenn. (Gen. John-						

DATE.	AUGUST, 1862.	CASUALTIES. UNION. K.	UNION. W.	UNION. P-M	CONFED. K.	CONFED. W.	CONFED. P-M
	son captured)	64	100	200	110	k	& w
23	Big Hill, Madison Co., Ky	10	40		25		
23	Waterloo Bridge, Va				37	94	
23	Pope's campaign in Va. to Sept. 1. Army of Virginia	7000			1500		8000
25-6	Ft. Donnelson, Tenn	31			30		
27	*Bull Run and Kettle Run, Va.	300			300		1000
28-9	*Groverton and Gainesville, Va. Army of Potomac losses in all corps	7000			12000	k w	& m
29	Manchester, Tenn				100		
30	†Second Battle of Bull Run, or Manassas, Va	800	4000	3000	700	3000	
90	Bolivar, Tenn	5	18	64	100		
30	†Richmond, Ky	200	700	4000	250	500	
31	Medow Station, Tenn	3	13	43			
	SEPTEMBER.						
1	Britton's Lane, Tenn	5	51	52	179	100	
1	†Chantilly, Va. McDowell's corps, Hooker and Kearney's Div. of 3d corps, and Reno's corps. (Gens. Kearney and Stearns, Federals, killed	1300			800		
6	Washington, N. C	8	36		30	100	
9	Columbus, Tenn				18	45	
10	Cold Water, Miss				4	80	
10	Fayetteville, W. Va	13	80				
12-	15. Harper's Ferry, Va. 11583 Union prisoners taken	80	120		500		
14	*South Mountain, Md. (Gen. Reno killed)	443	1800		900	2344	1500
14-6	†Mumfordsville, Ky	50		3566	715		
15	Harper's Ferry surrenders 11,500 Federals						
17	*Antietam, or Sharpsburg, Md. Total loss in all corps	2010	9416	1043	3500	16399	6000
19-	20. *Iuka, Miss	144	598		263	692	501
20	Blackford's Ford, Va	92	131	103	33	231	
22	Emancipation Proclamation issued						
30	Newtonia, Mo	50	80	115	220	280	
	OCTOBER.						
1	Shepherdstown, Va		12		60		
3-4	Corinth, Miss	315	1812	232	1423	5692	2248
5	Metamora, Miss	500			400		
7	La Vergne, Tenn	3	9		80		175
8	*Perryville, Ky	916	2943	489	2500		

DATE.	OCTOBER, 1862.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P–M	K.	W.	P–M
10	Harrodsburg, Ky..............						1600
17	Lexington, Ky................	4	24	350			
18	Morgan, the raider, dashed into Lexington and captured 125 prisoners..................						
22	Maysville, Ark.................						
22	Pocotaligo, S. C...............	43	258		14	102	
	NOVEMBER.						
1	Artillery fight at Philmont, Va.						
3	Reconnoisance at the base of Blue Ridge Mts. Confederates literally driven into the river and drowned by scores.						
3	Harrisonville, Mo........	10	3		6	20	
4	Galveston, Texas, surrendered						
5	Nashville, Tenn...............		26				23
6	Garretsburg, Ky...............				17	85	
7	Big Beaver Creek, Mo........			300			
8	Hudsonville, Miss.............				16		185
21	Gen. Sumner demands surrender of Fredericksburg, Va...						
24	Beaver Creek, Mo............	6	10		5	20	
28	Crane Hill, Boonesboro, Ark..	4	36		75	300	
28	Hartwood Church, Va.........	4	9	200			
	DECEMBER.						
4	Winchester, Va., captured by Union soldiers						
5	Coffeeville, Miss..............	10	54		7	43	
7	Fayetteville, Ark......	167	798	183	300	1200	
7	Hartsville, Tenn..............	55		1800	21	114	
9	Dobbin's Ferry, Tenn.........	5	48				
12–8	Goldsboro expedition, N. C...	90	478		71	268	400
13	†Frederickburg, Va., Army of the Potomac................	1180	9028	2145	579	3870	127
14	Kingston, N. C................	40	120		50	75	400
18	Lexington, Tenn....	7	10	124	7	28	
20	Holly Springs, Miss...........			1000			
21	Davis Mills, Miss.............		3		22	50	
28–9	†Chicasaw Bayou, Vicksburg.	191	982	756		207	
30	Red Mound, Tenn.............	23	139	58	50	150	300
31	To						
	JANUARY, 1863.						
1	*Murfreesboro, or Stone River, Tenn., Army of Cumberland.	1533	7245	2800	1456	0	
1	Galveston, Tex.	600			50		
8	Springfield, Mo...............	14	144		4	200	
11	*Ft. Hindman, Ark...........	129	831		100	400	5000

DATE.	FEBRUARY, 1863.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P–M	K.	W.	P–M
3	Ft. Donnelson, Tenn...........	16	60	50	140	400	130
	MARCH.						
5	Spring Hill and Unionville, Tenn........................	100	300	1306	150	450	
14	Port Hudson, La..............		65				
17	Kelly's Ford, Va..............	9	35		11	88	
20	Vaught's Hill, Tenn..........	7	48		63	300	
30	Dutton's Hill, or Somerset, Ky.	10	25		200		
	APRIL.						
7	Bombardment of Ft. Sumter, by South Atlantic squadron.	2	20		4	10	
10	Franklin and Harpeth River, Tenn........................	100			19	35	85
12–4	Irish Bend, or Indian Ridge. La..........................	350				400	2000
16	Siege of Suffolk, Va..........	44	202		500		400
26	Capè Girardeau, Mo..........	6	6		60	275	
27	Streight's raid from Tuscumbia, Ala., to Rome, Ga......	12	69	1466			
29	Fairmount, W. Va......... ...	1	6		100		
30	Spottsylvania Court House, Va	58					
	MAY						
1	Port Gibson, Miss............	130	718		1150		500
1	La Grange, Ark...............	2000	k w	& m			
1–4	*Chancellorsville, Va.........	1512	9518	5000	1581	8700	2000
2	†Fredericksburg, Va..........	2000					
11	Horse Shoe Bend, Ky........	10	20	40	100		
12	Raymond, Miss...............	60	341		909		
14	*Jackson, Miss................	40	240		450		
16	*Champion Hills, Miss. (20 cannon captured)...........	426	1842	189	2500		1800
17	*Big Black River, Miss. (17 cannon captured)...........	29	242		600		2500
18	to 22. †Siege of Vicksburg, by Gen. Grant and Porter's gunboat fleet. (31,277 Con. killed, wounded and miss'ng	545	3688	303			
27	to July 9. Siege of Port Hudson, La.....................	500	2500		100	700	6408
	JUNE.						
4	Franklin, Tenn...............	25			200		
6–8	*Milliken's Bend, La. Colored regm'ts. No quarters shown.	154	223	115	125	400	200
9	Monticello and Rocky Gap, Ky	4	26		20	80	
9	Bevery Ford and Brandy Station, Va. Cavalry fight.....	500			700		
13–5	†Winchester, Va.............	3000			850		

DATE.	JUNE, 1863.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P–M	K.	W.	P–M
14	Martinsburg, Va...............			200	1	2	
17	Aldie, Va. Kilpatrick's cavalry	24	41	89		100	
20–1	La Forche Crossing, La......	8	40		53	150	
21	Upperville, Va................		94		20	100	60
23	Brashearn City, La...........	46	40	300	3	18	
23	to 30. *Rosenkranz's campaign from Murfreesboro to Tallahoma, Tenn...............	85	462		1634		
28	Donaldsonville, La...........				39	112	150
30	Hanover, Penn................	12	43			75	60
	JULY.						
1–3	* Gettysburg, Pa., Army of the Potomac. Decisive battle of the war.......................	2834	13709	6643	3500	14500	13621
1–	26. Morgan's raid into Kentucky, Indiana and Ohio....	22	80	790	86	385	3000
4	*Helena, Ark..................	57	117	32	173	687	776
4	Vicksburg surrenders						
4–5	* Bolton and Birdway Ferry, Miss. (rear guard of Johnston's army)................						2000
5	Smithburg, Md................	30			30		100
5	Lebanon, Ly	9	15	400	3	6	
8	* Port Hudson surrenders.....						5500
9–	16. †Jackson, Miss...........	100	800	100	71	504	764
10–	Sept. 6. Siege of Fort Wagner, Morris Island, S. C..........	1757			501		
13	Yazoo, City, Miss.............						250
13	Donaldsonville, La............	450					
13–	15. Draft riots in N. Y. City..	1000					
14	Falling Waters, Md...........	29	36		125		1500
14	* Bristow Station, Va..........	51	329		1200		800
16	Sheppardtown, Va............				25	75	
17	Honey Springs, Indian Ter....	17	60		150	400	
17	Wytheville W. Va............	17	61		75		125
21–3	Manassas Gap and Chester Gap, Va....................	35	102		300		
	AUGUST.						
1–3	Rappahannock, Station, Va...	16	134				
3	Jacksonville, La..............	2	2	27			
9	Sparta, Tenn.................	6	25				
20	Lawrence, Kas., burned......						
21	Massacre at Lawrence, Kas..	140	24		40		
26	Rocky Gap, Va................	16	113		150		
25	to 31. Brownsville Bayou, Ark	13	72				
	SEPTEMBER.						
8	**Night attack on Ft. Sumter...**	3		114			

DATE.	SEPTEMBER, 1863.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P-M	K.	W.	P-M
9	Cumberland Gap, Tenn.						2000
13	Culpepper, Va	3	40		10	40	75
19	and 20. Chickamauga, Ga. Army of Cumberland; 13,412 Confed. wounded	1644	9262	4945	2389		2003
22	Blountsville, Tenn.	5	22		15	50	100
29	Near Morganzia, La.	14	40	400			
	OCTOBER,						
11	Henderson's Mills, Tenn.		11		30		
12-3	Ingham's Mills and Wyatt's, Miss	45			50		
13	Culpepper and White Sulphur Springs, Va.	8	46				
14	Auburn, Va.	11	42		8	24	
14	Bristol Station, Va.	51	329		750		150
15-8	Canton, Brownsville, and Clinton, Miss.				200		
17	President Lincoln calls for 300,000 more men						
18	Charlestown, W. Va.	12	13	379			
21	Cherokee Station, Ala.	7	37		40		
25	Pine Bluff, Ark.	11	27		53	164	
26	Cane Creek, Ala.	2	6		10	30	
27	Wauhatchie, Tenn.	76	339		300	1200	
	NOVEMBER.						
3	Grand Cateau, La.	26	124	570	60	320	65
3-4	Colliersville & Moscow, Tenn	7	57			100	
6	Rogersville, Tenn.	5	12	650	10	20	
6	Droop Mountain, Va.	31	94		50	250	100
7	Rappahannock Station, Va.	370			11	98	1627
11	Natchez, Miss.	4	6		4	8	
14	Huff's Ferry, Tenn.	100					
14	Maysville, Tenn.	100					
16	Campbell's Station, Tenn.	60	340		570		
17	to Dec. 4. Siege of Knoxville, Tenn. Army of the Ohio	20	80		80	400	300
23-5	*Chattanooga, Tenn., Lookout Mt., and Mis'y Ridge, Army of the Tennessee	757	4529	330	361	2181	6141
26-8	Operations at Mine Run, Va., Army of the Potomac	100	400		100	400	
27	Cleveland, Tenn.						200
27	*Ringgold and Taylor's Ridge, Ga.	68	351		50	200	230
	DECEMBER.						
10-4	Bean's Sta. and Morristown, Tenn.	700			932		150

DATE.	DECEMBER, 1863.	CASUALTIES.					
		UNION			CONFED.		
		K.	W.	P-M	K.	W.	P-M
19	Barran Fork, Ind. Ter........				50		
28	Charleston, Tenn.............	2	15		8	39	21
30	St. Augustine, Fla............	4					
	JANUARY, 1864.						
1	London Heights, Va..........	29		41	4	10	
3	Jonesville, Va.................	12	48	300	4	12	
13	Mossy Creek, Tenn				14		
16–7	Dandridge, Tenn..............		150				
23	Rolling Prairie, Ark...........	11					
24	Taswell, Tenn................				31		
27	Kelly's Ford, Tenn...........	100			65		
29	Medley, W. Va................	10	70			100	
	FEBRUARY.						
1–3	Newberne, N. C................	16	50	250	5	30	
1	March 8. Yazoo River exp'd'n	35	121		35	90	
3–	March 5. Expedition from Vicksburg to Meridian, Miss.	50	138	105	503		212
5	Qualltown, N. C...............	3	6				50
6	Morton's Ford, Va............	10	201				100
9	Morgan's Mills, Ark...........	1	4		65		
10–	25. Smith's raid from Germantown, Tenn., into Miss..	43	267			50	300
14–5	Waterproof, La. Col'd troops.	8	14		15		
20	Olustee or Silver Lake, Fla...	193	1175	400	100	400	
22	Mulberry Gap, Tenn..........	13		256			
25–7	Buzzard Roost, Ga	17	272		20	120	
28–	March 4. Kilpatrick's raid from Stephensburg to Richmond, Va.	330			308		
	MARCH.						
1	Burton's Ford, Va.............	10					30
9	Suffolk, Va....................	8	1			25	
17	Manchester, Tenn.............				21		
17	Gen. Grant assumes command of all the armies of the U. S.						
21	Henderson Hills, La..........		1		8		250
25	Ft. Anderson, Ky.............	14	46		10	40	
26	to 30. Longview and Mt. Elba, Ark.........................	4	18		12	35	300
31	Near Snydersville, Miss......	16	3		3	7	
	APRIL.						
2	Spooneville, Ark............	10	33		100		
3	Okalona, Ark..................	16	74		85		
5	Roseville, Ark................	19	11		15	25	11
7	Wilson's Farm, La............	14	39		15	40	100
8–9	Sabin Cross Roads and Pleasant Hills, La................	300	1600	2100	600	204	500
10–3	Prairie di Ann, Ark...........	100			50		

DATE.	APRIL, 1864.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P-M	K.	W.	P-M
12	Pleasant Hill Landing, La....		7		200		
15	and 16. Liberty P.O. and occupation of Camden, Ark	255					
17	to 20. †Plymouth, N. C.......	20	80	1500	500		
18	Poison Springs, Ark..........	113	88	68			
23	and 24. Moneti's Bluff, La....	350			400		
24	Mark's Mills, Ark.............	100	250	100	110	228	40
30	Jenkin's Ferry, Ark...........	200	955		300	300	
	MAY.						
1-8	Hudnot's plantat'n, near Alexandria, La.................	33	87		25	100	
5-7	Battle of the Wilderness, Va., Army of the Potomac.......	5597	21463	10677	2000	6000	3400
6	Gen. Sherman begins his Atlanta campaign............						
5-9	Rocky Face Ridge, Ga. Army of the Cumberland..........	200	637		600		
6–7	Chester Station, Va...........	48	250		50	200	
8	Todd's Tavern, Va............	40	150		30	150	
8–	18. Spottsylvania, Fredericksburg Road, Army of the Pomac. (2 Confederate generals and 30 guns captured).......	4177	10687	2577	1000	5000	3000
9–	10. Swift Creek, Va..........	90	400				500
9–	10. Cloyn's Mountain, Va.....	126	585		699		300
9–	13. Sheridan's cavalry raids in Virginia.................	50	174	200			100
12–6	Drury's Bluff, Va..............	422	2383	210	400	2000	100
13–6	* Resaca, Ga	600	2147		300	1500	1000
15	Newmarket, Va..............	120	500	240	85	320	
16	to 30. Bermuda Hundred, Va.	200	1000		3000		
18	Calhoun Station, La..........	60	300		500		
23–7	North Ann River, Va.........	223	1400	290	2000		
25	to June 4. *Dallas, Ga. Army of the Cumberland.........	2400			3000		
26–9	Decatur, Ala..................	48			60		
27–8	Hanoverton, Va...............	25	119	200	475		
30	Ashland, Va...................	26	130				
	JUNE.						
1–12	†Cold Harbor, Va.: 10,570 Fed. wounded.........................	1995		2450	1200		500
5	Piedmont, W. Va.............	130	650		400	1450	1060
6	Lake Chicot. Ark.............	40	70		100		
9	Mount Sterling, Ky...........	35	150		50	200	250
9–30	Kenesaw Mountain, Army of the Cumberland............	1370	6500	800	1100		3500
10	Brice's Cross Roads, Miss....	223	394	1623	131	475	

DATE.	JUNE, 1864.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P–M	K.	W.	P–M
11	Cynthiana, Ky	150			300		400
11	and 12. Trevillian Sta., Va	85	490	160	100		370
15	Malvern Hill	25	3				
15–9	†Petersburg, Va., Army of the James	1398	7474	1814	200		
17	and 18. Lynchburg, Va	100	500	100			
19	Alabama sunk off Charbourg, France, by the Kearsage						
20	to 30. In front of Petersburg, Va	112	506	800			
22–3	Jerusalem Plank road, Va. Army of the Potomac	604	2494	2117		300	200
22	to 30. ‡Wilson's raid on the Weldon railroad, Va	92	317	734	365		
23–4	Jones' Bridge, Va	54	235	300	250		
25–9	Clarendon, St. Charles river, Ark		200			200	200
28	Confederates move on Washington by way of the Shenandoah Valley, Va						
	JULY.						
1	to 31, In front of Petersburg, Va., Deep Bottom, Newmarket and Malvern Hill	898	4060	3110	400	600	200
2–5	Smyrna, Ga	60	310		100		
3–9	Expedition from Vicksburg to Jackson, Miss		150			200	
5–18	Smith's expedition from La Grange, Tenn., to Tapola, Miss	85	567		110	600	
6–10	Chattahoochee river, Ga. Army of the Ohio	80	450	200			
9	Monocacy, Md	90	579	1200		400	
12	Ft. Stephens, Washington, D.C	54	319		500		
18	Ashby's Gap, Va	200					
19	20. Winchester, Va	37	175			300	200
20	*Peachtree Creek, Ga	300	1310		1113	2500	0083
22	*Atlanta, Ga. (McPherson k'ld)	500	2141	1000	2482	4000	2017
24–4	Kernstown and Winchester	1200			600		
26–	31. Stoneman's raid to Macon	100		990			
26–	31. McCook's raid to Lovejoy Station, Ga	100	500				
28	Atlanta, Ga, Second sortie at Ezra Chapel	100	600		642	4000	1900
	AUGUST.						
1–31	In front of Petersburg, Va	87	484				
5–23	*Ft. Gaines, Mobile Harbor,						

DATE.	OCTOBER, 1864.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P-M	K.	W.	P-M
	Ala. (100 drowned by sinking of the Tecumseh. 150 guns captured).............	75		170			2144
7	Morefield, Va.................	9	22		100		400
9	Explosion at City Point, Va...	70	130				
14–8	Strawberry Plains, Va........	400	1755	1400		1000	
16	Front Royal, Va...............	13	58		30	150	300
18	19, 21. *Six Mile House, Weldon R. R. (Railroad cap'd).	212	1155	3176		2000	2000
21	Summitt Pt., Berryville, and Flowing Springs, Va.........	600			400		
25	Smithville and Kearneysville, Va..........................	20	60	100	300		
25	Ream's Station, Va...........	127	546	1709	1500		
29	Smithfield, Va................	10	90		200		
31	And						
	SEPTEMBER.						
1	Jonesboro, Ga............. ..	1149			200		
1–8	Rosseau's pursuit of Wheeler in Tennessee................	10	30		300		
10	Oct. 30. In front of Petersburg, Va. Army of the Pot'c	170	820	812		1000	
2	*Fall of Atlanta, Ga..........						200
3–4	Berryville, Va...............	30	182	100	25	100	79
4	Greenville, Tenn.............		6		10	60	75
16	Sycamore Church, Va.........	400			50		
19–	22. *Winchester and Fisher's Hills, Va. 2d Div. 19th corps under Sheridan. (Con. Gens. Rhodes and Gordon killed).	693	4033	623	3259		3600
23	Athens, Ala..................			950	5	25	
26–7	*Pilot Knob, or Ironton, Mo..	28	56	100	1500		
27	Massacre by Price, Mo........	122	2				
28–	30. Newmarket Heights, or Laurel Hill, Va.............	400	2029		2000		
30	And OCTOBER.						
1	Poplar Springs Church, Va...	141	788	1750		800	100
2	Waynesboro, Va..............	50					
2	Saltville, Va.................	54	190	104	18	71	21
5	Allatoona, Ga................	142	352	212	231	500	411
7–13	Darbytown Road, Va.........	105	502	206	1100		350
13	Strasburg, Va................	30	144	40			
13	Dalton, Ga. Troops under Col. Johnson......................			400			
15	Glascow, Mo..		400		50		
19	*Cedar Creek, Va, (Sheridan's ride)........	588	3516	1891	3000		1200

DATE.	OCTOBER, 1864.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P–M	K.	W.	P–M
27	†Natcher's Run, Va...........	156	1047	699	206	600	200
27–8	Fair Oaks, Va.................	120	783	400	60	311	80
29	Beverly, W. Va...............	8	25	13	17	27	92
	NOVEMBER.						
9	Atlanta,Ga....................				20		
12	Newton and Cedar Spring, Va		84	100			150
13	Ball's Gap, Tenn.............	5	36	200			
18	Myerstown, Va...............	60			10		
22	Griswoldville, Ga............	10	52		50	200	400
26	Saundersonville, Ga..........			100			100
26–9	Sylvan Grove, Ga............	46			600		
29–	30. *Spring Hill and Franklin, Tenn.........................	189	1033	1004	1750	3800	702
30	Honey Hill, or Grahamsville, S. C..........................	66	645				
	DECEMBER.						
1	Stony Creek Station, Va......		40				175
1–14	*In front of Nashville, Tenn.	16	100				
1–31	In front of Petersburg. Army of the Potomac.............	40	329				
4	Block House No. 7, Tenn.....		100		100		
5–8	Murfreesboro, Tenn..........	30	175				197
6–9	Deveaux's Neck, S. C.........	39	300	200	400		
8–9	Hatcher's Run, Va............	125					
10–	21. Siege of Savannah, Ga....		200				800
12–	21. Stoneman's raid, Bean's Sta., Tenn., to Saltv'le, Va.	20	123		8	126	500
13	*Ft. McAllister, Ga...........	24	110				250
15–7	Nashville, Tenn...............	400	1740				4462
17	Franklin, Tenn. Wilson's cav. Wounded and sick captured						1800
25	†Ft. Fisher, N. C..............	8	38		3	55	280
28	Egypt Station, Miss..........	23	88				500
	JANUARY, 1865.						
2	Franklin, Miss................	4	9		20	30	
13–5	*Ft. Fisher, N. C..............	184	749		400		2083
16	Explosion of magazine at Ft. Fisher, N. C. (Fort and 72 guns captured)............	25	66				
25	To Feb. 9. Combahee River, S. C..........................	138					
	FEBRUARY.						
5–7	†Dabney's Mills, Hatcher's Run, Va.....................	232	1062	186	1200		
8–14	Williston, Blackville, and Aiken, S.C. Kilpatrick's cav.				200		100
10	James Island, S. C............	20	76		20	70	

DATE.	FEBRUARY, 1865.	CASUALTIES.					
		UNION.			CONFED.		
		K.	W.	P-M	K.	W.	P-M
18-	22. Ft. Anderson, N. C.	40	204		70	400	375
27-	March 25. Sheridan's raid in Virginia	35					1667
	MARCH.						
8-10	Wilcox Bridge, N. C	80	421	600	1500		
16	Averysboro, N. C	77	477		108	540	217
19-	21. *Bentonville, N. C., Kilpatrick's cavalry	191	1086	287	267	0	1625
22-	April 24. Wilson's raid from Chickasaw, Ala., to Macon.	63	345	63	22	38	6766
25	Ft. Stedman, in front of Petersburg, Va	68	337	506	800		1881
25	Assault of 2d and 6th corps	103	864	209			834
26-	April 9. Siege of Mobile, Ala., including Spanish fort and Port Blakely	213	1211		500		2952
29	Quaker Road, Va	55	300		135	400	100
31	Boydton and White Oak Roads	177	1034	556		1000	235
31	Dinwiddie Court House, Va.	67	354		400		
	APRIL.						
1	*Five Forks, Va. All of Lee's artillery captured)	124	706		3000		5500
2	Fall of Petersburg, Va	269	2565	5000			3000
3	Fall of Richmond. 6,000 Con. prisoners taken, of whom 5,000 were sick and wounded						
5	Amelia Springs, Va	20	96				
6	Sailor's Creek, Va	166	1014		1000		6000
7	Farmville, Va	655					
8-9	Appomattox Court House. Va.	200			500		

APRIL—CONTINUED.

9—Lee surrendered to the Armies of the Potomac and James (Maj.-Gen. Grant), with 26,000 prisoners.

14—Mobile surrendered to a combined army and naval attack.

14—The flag that Gen. Anderson had lowered at Ft. Sumter was returned to its position.

14—President Lincoln was assassinated at Washington. He was shot in the back of the head at Ford's theatre by Wilkes Booth, and died next morning.

15—Andrew Johnson, Vice-President, took the oath of office as President.

17—Surrender of Mosby to Maj.-Gen. Hancock, with 700 prisoners.

25—Wilkes Booth shot in a barn in Virginia and died in twenty-four hours.

APRIL—CONTINUED.

26—Johnson surrendered to the Armies of the Tennessee, Georgia, and Ohio (Maj.-Gen. Sherman), with 29,924 prisoners.

MAY, 1865.

5—Galveston, Tex., surrenders to the Federals.

10—Capture of Jefferson Davis at Irwinsville, Ga.

10—Surrender of Sam. Jones' command at Tallehassee, Fla., with 8,000 prisoners.

11—Chalk Bluff, Ark. Surrender of Jeff Thompson's command with 7,454 prisoners.

13—Palmetto Ranch, Tex., 118 Federals killed.

26—Surrender of Kirby Smith to Maj.-Gen. Canby's command with 20,000 prisoners.

26—The Armies of the East and West were disbanded and returned home, after a review at Washington.

JUNE, 1865.

6—An order was issued for the release of all prisoners of war in the depots of the North.

JULY, 1865.

7—Mrs. Surratt, Harold, Payne, and Azertoth hanged at Washington for conspiracy in the murder of Lincoln.

DECEMBER, 1865.

18—Secretary Seward officially declared slavery abolished.

EXPLANATION OF MARKS AND ABBREVIATIONS.

* Federals victorious.
k—Killed.
m—Missing.
† Confederates victorious.
w—Wounded.
P-M—Prisoners and missing.

PRESENT FORCE OF OUR NATIONAL ARMY.

According to a report on the organized militia of the United States, which has just been prepared by the War Department, the United States, in case of need, can put 9,467,694 men in the field.

The total force of the militia number 115,669, of which 102,604 composed the infantry arm, 5,215 the cavalry, 5,267 the artillery, 649 special corps and 1,443 generals and staff officers. The total appropriation allowed the militia by the government amounted to $400,000, while the States during the same period spent $2,834,974 on these organizations.

New York is far in the lead, its strength amounting to 12,901 officers and enlisted men. Pennsylvania is second, with 8,482; Ohio third, with 6,493; Illinois, 6,226; South Carolina, 5,711; Massachusetts. 5,344; California, 4,364; Georgia, 4,355; New Jersey, 3,938; Alabama, 3,120; Indiana, 3,026; Virginia, 3,006; Texas, 3,000; Michigan, 2,875; Connecticut. 2,740; Wisconsin. 2,649; Iowa, 2,398; Missouri, 2,107: Minnesota, 2,027; Maryland, 1,885; Louisiana, 1,883; Kansas, 1,815; Mississippi, 1,695;

Oregon, 1,530; District of Columbia, 1,471; Kentucky, 1,469; North Carolina, 1,403; Tennessee, 1,389; New Hampshire, 1,380; Maine, 1,337; Washington, 1,184, Nebraska, 1,137; Florida, 1,088; Utah, 1,003; Rhode Island, 979; Arkansas, 974; West Virginia, 845; Colorado, 833; Vermont, 800; South Dakota, 798; Idaho, 535; North Dakota, 525; Montana, 510; Arizona, 500; New Mexico, 470; Wyoming, 450; Nevada, 439; Delaware, 427, and Oklahoma, 153.

In case of necessity, Illinois could place 852,625 in the field; Pennsylvania comes next with 771,874, and Ohio third with 650,000; New York, 560,000; Indiana, 481,192; Kentucky, 361,138; Missouri, 350,000; Massachusetts, 339,391; Wisconsin, 306,343; Texas, 300,000; Virginia, 295,440; New Jersey, 284,887; Georgia, 264,071; Michigan, 260,000; Iowa, 245,899; North Carolina, 240,000; Mississippi, 228,700; Maryland, 205,816; Arkansas, 205,000, and the remainder of the States below 200,000 each; a total of 9,467,694 officers and men.

THE PHONOGRAPH.

THE PHONOGRAPH is a machine for recording and then transmitting sounds, speech, mucic, etc. It is the invention of Thos. A. Edison, the most noted electrician of this age. The phonograph was accidentally discovered. Mr. Edison was at work on an apparatus for recording a telegraphic message, by having an armature (with a needle fastened in one end) of the sounder make indentations on a piece of tin foil wrapped around a cylinder. The message would thus be punctured or indented on this tin foil, then, by substituting another needle—blunt—for the sharp one and turning the cylinder, the armature would be vibrated as the needle entered into and passed out of the indentations. While experimenting, he turned the cylinder verp rapidly, and instead of a succession of "clicks," a musical sound was produced. He seized the idea, and the Edison Phonograph was the result. The perfected phonograph of to-day consists of a cylinder of wax, or other plastic material, which is revolved either by hand, foot power or an electric motor. This cylinder, called the *phonogram*, is used for recording the sound. This is done by a diaphragm—such as is used in a telephone—into the center of which is fastened a sharp needle, which rests upon and just touches the phonogram. When the words are spoken the diaphragm vibrates, moving this needle up and down, and a series of indentations are made in a spiral line on the phonogram, which is turning around about eighty-five times a minute. To make the phonograph *speak*, or repeat the words, another diaphragm, similar to the first or recorder, but having a blunt instead of a sharp needle, is placed at the starting point and the phonogram made to revolve, of course, as the needle passes over the indentations it vibrates the diaphragm and the words are reproduced—as in a telephone.

THE TELEPHONE.

In 1831. Wheatstone showed that when the sounding boards of two musical instruments were connected together by a rod of pine wood, a tune played on one will be faithfully reproduced by the other. Somewhat later a toy, called the Lovers' String, was made, and is the simplest form of a mechanical telephone. The toy consisted of two tin cups, the bottoms made of parchment or cat gut tightly stretched like a drum head, and connected, one with the other, by a string or cord. When the string was drawn taut, sounds, such as those of ordinary speech, produced in front of one of the cups were transmitted along the string to the other cup and reproduced there. This was the first telephone. At various times between 1831 and 1876, electricians and scientists had experimented with electro-magnets as a means of transmitting sounds a long distance. Charles Bourseul in 1854 published an article on the electrical transmission of speech, and recommended the use of a flexible plate at the source of sound, which would vibrate in response to the atmospheric pulsations and thus open and shut an electrical circuit, and would thus operate, by an electro-magnet, upon a similar plate at a distance connected by wire with the first, causing it to give out as many pulsations as there were breaks in the circuit. In 1876, Alexander Graham Bell first exhibited the speaking telephone at the Philadelphia Centennial Exposition. It is this telephone, greatly improved however, which is now in common use. This telephone consists of a compound permanent magnet fitted into the center of a hard rubber tube and carrying, at one end, a short electro-magnet. In front of this electro-magnet is fixed a thin, soft iron disk, about one and three-fourths inches in diameter. This disk lies at the end of the rubber tube, where the tube is formed into a mouth piece. The action of telephoning with this telephone is very simple. The sound, as ordinary speech, is made in the mouth piece. The atmosphere conveys the sound—vibrations against the thin, iron disk (commonly called the diaphragm.) The disk vibrates in sympathy, and ceming against the electro-magnet, breaks and opens the electric circuit with every vibration. By means of the connecting wire, the electro-magnet in the distant telephone causes the diaphragm to vibrate corresponding to the breaks in the current. This of course vibrates the atmosphere and the pulsations are conveyed to the ear. The telephone thus described is now used as a receiver. The transmitter invented and improved by Edison and Blake, is combined with the Bell telephone and makes the telephone of general use. Telephonic communication have been held between Chicago and New York, but not with overwhelming success.

Cost of Tin Roofing per Square and per Square Foot.

The following table shows the cost per square and per square foot of tin roofing, laid with 14x20 tin, with tin at any price from $4 to $10 per box. The first column contains the price per box of tin; the second column shows the cost of tin per square (100 square feet) of surface, and the third column shows the cost of tin per square foot of surface:

FLAT SEAM ROOFING—COST WITH 14x20 TIN.

Price of Tin per box.	Cost per square of flat roof 14x20 Tin.	Cost per sq. foot.	Price of Tin per box.	Cost per square of flat roof 14x20 Tin.	Cost per sq. foot.
$4.25	$2.21	.0221	$ 8.25	$4.29	.0420
4.50	2.34	.0234	8.50	4.42	.0442
4.75	2.47	.0247	8.75	4.55	.0455
5.00	2.60	.0260	9.00	4.68	.0468
5.25	2.73	.0273	9.25	4.81	.0481
5.50	2.86	.0286	9.50	4.94	.0494
5.75	2.99	.0299	9.75	5.07	.0507
6.00	3.12	.0312	10.00	5.20	.0520
6.25	3.25	.0325	10.25	5.33	.0533
6.50	3.38	.0338	10.50	5.46	.0546
6.75	3.51	.0351	10.75	5.59	.0559
7.00	3.64	.0364	11.00	5.72	.0572
7.25	3.77	.0377	11.25	5.85	.0585
7.50	3.90	.0390	11.50	5.98	.0598
7.75	4.03	.0403	11.75	6.11	.0611
8.00	4.16	.0416	12.00	6.24	.0624

STANDING SEAM ROOFING—COST WITH 14x20 TIN.

Price of Tin per box.	Cost per Square of stand'g seam roof with 14x20 Tin.	Cost per sq. foot	Price of Tin per box.	Cost per square of stand'g seam roof with 14x20 Tin.	Cost per sq. foot.
$4.25	$2.37	.0237	$ 7.25	$4.03	.0403
4.50	2.51	.0251	7.50	4.17	.0417
4.75	2.65	.0265	7.75	4.31	.0431
5.00	2.79	.0279	8.00	4.45	.0445
5.25	2.93	.0293	8.25	4.59	.0459
5.50	3.06	.0306	8.50	4.73	.0473
5.75	3.20	.0320	8.75	4.87	.0487
6.00	3.34	.0334	9.00	5.01	.0501
6.25	3.48	.0348	9.25	5.15	.0515
6.50	3.62	.0362	9.50	5.29	.0529
6.75	3.76	.0376	9.75	5.43	.0543
7.00	3.90	.0390	10.00	5.57	.0557

Cost of Tin Roofing per Square—continued.

FLAT SEAM ROOFING—COST WITH 20x28 TIN.

Price of Tin per box.	Cost per square of flat roof 20x28 Tin.	Cost per sq. foot.	Price of Tin per box.	Cost per square of flat roof 20x28 Tin.	Cost per sq. foot.
$8.00	$2.01	.0201	$16.00	$4.01	.0401
8.50	2.13	.0213	16.50	4.13	.0413
9.00	2.26	.0226	17.00	4.26	.0426
9.50	2.38	.0238	17.50	4.38	.0438
10.00	2.51	.0251	18.00	4.51	.0451
10.50	2.63	.0263	18.50	4.63	.0463
11.00	2.76	.0276	19.00	4.76	.0476
11 50	2.88	.0288	19.50	4.88	.0488
12.00	3.00	.0300	20.00	5.01	.0501
12.50	3.13	.0313	20 50	5.13	.0513
13.00	3.25	.0325	21.00	5.26	.0526
13.50	3.38	.0338	21 50	5.38	.0538
14.00	3.50	.0350	22 00	5 51	.0551
14.50	3 63	.0363	22 50	5 63	.0563
15.00	3.75	.0375	23.00	5.76	.0576
15 50	3.88	.0388			

STANDING SEAM ROOFING—COST WITH 20x28 TIN.

Price of Tin per box.	Cost per square of standi'g seam roof with 20x28 Tin.	Cost per sq. foot.	Price of Tin per box.	Cost per square of standi'g seam roof with 20x28 Tin.	Cost per sq. foot.
$8.00	$2.15	.0275	$16.50	$4.42	.0442
8 50	2.28	.0228	17.00	4 56	.0456
9.00	2.41	0241	17.50	4.69	.0469
9.50	2.55	.0255	18 00	4 82	.0482
10.00	2.68	.0268	18.50	4.96	.0496
10.50	2 82	0282	19.00	5.09	.0509
11.00	2.95	.0295	19 50	5.23	.0523
11.50	3.09	.0309	20.00	5.36	.0536
12 00	3 21	.0321	20.50	5 49	.0549
12 50	3.35	.0335	21.00	5.63	.0563
13 00	3 48	.0348	21 50	5.76	.0576
13 50	3 62	.0362	22.00	5.90	.0590
14.00	3 75	.0375	22 50	6 03	.0603
14.50	3 89	.0389	23.00	6 17	.0617
15.00	4 02	.0402	23.50	6 30	0630
15 50	4 15	0415	24.00	6 43	.0643
16.00	4.29	.0429			

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Darmstadt	550,000	Buda-Pest	400,000
Leipsic	550,000	University of Chicago *	380,000
Strasburg	525,000	Harvard University *	300.000
Royal, Copenhagen	500,000	Heidelberg	300.000
		Astor, New York *	240,000
		Vatican, Rome	225,000

*Exclusive of pamphlets. The Harvard University Library has 278,000, and the Library of Congress 210,000 pamphlets.

NOTABLE BRIDGES OF THE WORLD.

Sublician Bridge at Rome, oldest wooden bridge; 7th century. Twice rebuilt, but ruins only remain.

The bridge at Burton over the Trent; once the longest bridge in England; 1,545 feet.

The old London Bridge was the first stone bridge; commenced in 1176. completed in 1209.

The Niagara Suspension Bridge was built by Roebling in 1852-55. Cost $400,000; 245 feet above water; 1,268 feet long; estimated 1,200 tons.

The Brooklyn Bridge was commenced under the direction of J. Roebling in 1870, and completed in about thirteen years; 3,475 feet long, 135 high. Cost $15,000,000.

The Canti-Lever Bridge, 1884, over the Niagara, steel. Length, 910 feet; weight, 3,000 tons. Cost $222,000.

Rush-street Bridge, Chicago. 1884. The largest general traffic draw-bridge in the world. Will accommodate four teams abreast, and its foot passages are 7 feet wide in the clear. Cost $132,000.

Cincinnati, over the Ohio River (suspension), 2,220 feet long.

Highbridge, Harlem (stone), 1,460 feet long.

Victoria Bridge at Montreal over the St. Lawrence River (tubular); 9,144 feet long.

Louisville, over the Ohio River (truss), 5,218 feet long.

St. Louis, over the Mississippi River (steel), 2,045 feet long. Cost over $6,000.000.

Trajan's, over the Danube River (stone), 4,770 feet long.

The Bridge of the Holy Trinity, Florence, built in 1569 of marble; 322 feet long.

UNIVERSITY BOAT RACING—INTERNATIONAL RACING.

1869, August 17. Oxford (Eng.) four beat Harvard (Am.) four over the Putney-Mortlake course on the Thames by three clear lengths. Time, 22-17.

1876, September 1. Yale four beat Columbia four at the Centennial Regatta, rowed over a mile and a half course on the Schuylkill, in 9.10¾; Columbia, 9.21. A four from First Trinity College, Cambridge, Eng., was entered, but withdrew by reason of illness of one of the four.

1878, a Columbia College four won the Visitors' Challenge Cup at Henley Regatta, Eng., in 8.42.

1895, July 9. At Henley Regatta Cornell rowed over the course and was awarded the heat, the Leander crew having withdrawn from the race. July 10 Trinity Hall beat Cornell by eight lengths.

Harvard and Yale University Eights.

The Harvard and Yale University "eights" have rowed as follows—distance, four miles straight:

DATE.	Course.	Winner.	Time.	Loser.	Time.
June 28, 1878	New London, Conn.	Harvard	20.44¾	Yale	21.29
June 27, 1879	“ “	“	22.15	“	23.58
July 1, 1880	“ “	Yale	24.27	Harvard	25.09
July 1, 1881	“ “	“	22.13	“	22.19
June 30, 1882	“ “	Harvard	20.47	Yale	20.50½
June 28, 1883	“ “	“	24.26	“	25.59
June 26, 1884	“ “	Yale	20.31	Harvard	20.46
June 26, 1885	“ “	Harvard	25.15½	Yale	26.30
July 2, 1886	“ “	Yale	20.41¼	Harvard	21.05¾
July 1, 1887	“ “	“	22.56	“	23.10½
June 29, 1888	“ “	“	20.10	“	21.24
June 29, 1889	“ “	“	21.30	“	21.55
June 27, 1890	“ “	“	21.29	“	21.40
June 26, 1891	“ “	Harvard	21.23	Yale	21.57
July 1, 1892	“ “	Yale	20.48	Harvard	21.42½
June 30, 1893	“ “	“	25.01½	“	25.15
June 28, 1894	“ “	“	22.47	“	24.40
June 28, 1895	“ “	“	21.30	“	22.05

AUSTRALIAN BALLOT SYSTEM.

INSTRUCTIONS FOR VOTERS
In Conformity with the Illinois State Laws.*

When entering the voting place, give your name, and if required, your residence, to the Judges of Election.

If your name be found on the Register, you will be permitted to enter the enclosed space inside the guard rail. Then, if your vote be not challenged, one of the Judges will hand you a Ballot, on the back of which he must write his initials. If your name be not on the Register, or has been erased, you cannot vote.

If your vote be challenged you will not receive a Ballot until you have established your right to vote, either under oath to the Judges of Election, or by affidavit.

When you have received a ballot retire at once, alone, into one of the voting booths, and prepare your ballot for the ballot box by marking it as the law prescribes.

At the top of each column you will find the name of each party ticket or list of canidates, as Democratic, Republican, Prohibition, etc. The names of all the candidates of each party and each group of petitioners are to be found in that column directly beneath the name of the party, and nowhere else.

At the left of the party name, or heading of the different tickets, will be a circle half-inch in diameter, thus: ○ At the left of each name on the ballot will be a square quarter-inch on each side, thus: ☐ To prepare your ballot for voting, you must mark it with a cross, thus: **X**, either in the circle at the top of the ticket, or in the square before the name of each candidate for whom you wish to vote; you can make this cross either with a pen or pencil.

Do not mark your ballot in any way, except as directed below, and do not erase any names.

The law of most states using the Australian ballot system, permits four methods of marking the ballots for voting, as follows:

1. To vote for all condidates of a party, that is to vote a straight party ticket, mark a cross in the circle at the head of the ticket of your choice, thus: ⊗ A ballot so marked will be counted for all the candidates in the column under the circle so marked.

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* Similar laws, differing only in unimportant details, are in use in a majority of the States of the Union.

2. To split or scratch a ballot make a cross in the circle at the head of the ticket of your choice, and then make a cross in the square before the name or names of any candidates for whom you want to vote on any other ticket or tickets. A ballot so marked will be counted for all of the candidates on the ticket under the circle marked, except for the offices for which the names of candidates are marked on the other ticket or tickets on the ballot, and the latter will be counted for the candidates marked in the square on those tickets. But voters are cautioned against marking a ballot by this method when there is more than one candidate to be elected to the same office on the same ballot, as in case of Presidential Electors, Congressman-at-Large, etc. The law says: "If the voter marks more names than there are persons to be elected to an office, his ballot shall not be counted for such office." Therefore, if you wish to split your ticket on Presidential Electors, Congressmen-at-Large, etc., you should do so by placing a cross (**X**) opposite the names of all those you wish to vote for, but you must be careful not to make a cross (**X**) opposite the names of more than the number of men to be elected for each office. When there is but one candidate to be elected to the same office on the same ballot, the danger of confusion above pointed out does not arise. A safe way to "split" a ticket, however, is to mark the name of each candidate for whom you want to vote in the squares and leave the circle blank.

3. Another method of marking a ballot, that is, to vote for some of the candidates on one ticket and remaining candidates on another ticket, leave all the circles blank and mark a cross in the square to the left of each candidate of your choice. A ballot so marked will be counted only for the candidate marked. But be careful not to mark more names than there are persons to be elected to office, or your ballot will not be counted for such office.

4. If the voter desires to vote for a candidate not on the ticket of his choice, he may write in the name of the candidate of his choice in the blank space on the ticket, making a cross (**X**) before the name written in.

Where the word ballot is used in this instruction the entire sheet given to the voter by the Judge of Election is meant.

Where the word ticket is used, only a single party group of candidates is meant.

In voting on any proposition submitted to vote, and printed on the ballot. make a cross (**X**), mark in the column opposite the headings "Yes" or "No," and your ballot will be counted "for," if you mark opposite "Yes," and "against," if you mark opposite "No."

Before leaving the voting booth fold your ballot so as to conceal the marks, and to expose the official endorsement on the back.

Leave the booth and hand your ballot to the judge in charge of the ballot box, who, without numbering it, must deposit it in the box.

You will not be allowed to occupy a voting booth with another voter.

You will not be allowed to occupy a booth more than five minutes, if others are waiting to vote.

You will not be allowed to remain in the enclosed space more than ten minutes, and you must quit it as soon as you have voted.

You will not be allowed to re-enter the enclosed space, after you have voted, during the election.

You will not be allowed to take a ballot from the polling place.

You will not be allowed to vote any ballot except the one you received from the judges.

If you spoil a ballot in preparing it, you must return it and ask for another in the place of it. Do not vote a torn or mutilated ballot.

If a voter will declare upon oath that he cannot read the English language, or that by reason of physical disability he is unable to mark his ballot, upon request he will be assisted by two of the election officers, appointed for that purpose, of opposite political parties. These officers will mark the ballot as directed by the voter.

Intoxication will not be regarded as a physical disability, and if a voter is intoxicated, he will receive no assistance in marking his ballot.

The polls will be opened at 6 o'clock in the morning and closed at 4 o'clock in the evening. Between these hours voters are entitled to absent themselves from their place of employment for the period of two hours for the purpose of voting. They will not be liable to any penalty for their absence, nor shall any deduction be made from their wages or salary on that account; but they must ask for leave of absence before the day of election, and their employer may specify the hours during which they may be absent.

☞ These are the prescriptions of the law as practiced in Illinois. For details and slight changes in other states, consult the Election Commissioners in your district.

COST OF ROYALTY IN ENGLAND.

POUNDS REDUCED TO DOLLARS.

The Queen—Privy Purse	$ 300,000	
Household Expenses and Sundries	1,625,000	
		$1,925,000
Prince of Wales		200,000
Princess of Wales		50,000
Children of the Prince of Wales (in trust)		180,000
Queen's Children—German Empress Frederick		40,000
Duke of Edinburgh		125,000
Princess Christian of Schleswig-Holstein		30,000
Princess Louise (Lorne)		30,000
Duke of Connaught		125,000
Princess Beatrice (Battenberg)		30,000
Duchess of Albany (daughter-in-law)		30,000
Queen's Cousins—Duke of Cambridge		60,000
Duchess of Mecklenburg-Strelitz		15,000
Duchess of Teck		25,000
Other Royal Pensions, together		125,305
Total		$2,990,305

RULES FOR SPELLING.

Words ending in *e* drop that letter before the termination *able*, as in move, moveable; unless ending in *ce* or *ge*, when it is retained, as in change, changeable, etc.

Words of one syllable, ending in a consonant, with a single vowel before it, double the consonants in derivatives; as, ship, shipping, etc. But if ending in a consonant with a double vowel before it, they do not double the consonant in derivatives; as troop, trooper, etc.

Words of more than one syllable, ending in a consonant preceded by a single vowel, and accented on the last syllable, double that consonant in derivatives; as commit, committed; but except chagrin, chagrined.

All words of one syllable ending in *l*, with a single vowel before it, have double *ll* at the close; as mill, sell.

All words of one syllable ending in *l*, with a double vowel before it, have only one *l* at the close; as mail, sail.

The words foretell, distill, instill and fulfill, retain the double *ll* of their primitives. Derivatives of dull, skill, will and full also retain the *ll* when the accent falls on these words; as dullness, skillful, willful, fullness.

Words of more than one syllable ending in *l* have only one *l* at the close; as delightful, faithful; unless the accent falls on the last syllable; as befall, etc.

Words ending in *l*, double the letter in the termination *ly*.

Participles ending in *ing*, from verbs ending in *e*, lose the final *e;* as have, having; make, making, etc.; but verbs ending in *ee* retain both; as see, seeing. The word dye, to color, however, must retain the *e* before *ing*.

All verbs ending in *ly*, and nouns ending in *ment*, retain the *e* final of the primitives; as brave, bravely; refine, refinement; except words ending in *dge;* as acknowledge, acknowledgment.

Nouns ending in *y*, preceded by a vowel, form their plural by adding *s;* as money, moneys; but if *y* is preceded by a consonant, it is changed to *ies* in the plural; as bounty, bounties.

Compound words whose primitives end in *y*, change the *y* into *i;* as beauty, beautiful.

THE USE OF CAPITALS.

1. Every entire sentence should begin with a capital.

2. Proper names, and adjectives derived from these, should begin with a capital.

3. All appellations of the Deity should begin with a capital.

4. Official and honorary titles begin with a capital.

5. Every line of poetry should begin with a capital.

6. Titles of books and the heads of their chapters and divisions are printed in capitals.

7. The pronoun I and the exclamation O are always capitals.

8. The days of the week and the months of the year begin with capitals.

9. Every quotation should begin with a capital letter.

10. Names of religious denominations begin with capitals.

11 In preparing accounts, each item should begin with a capital.

12. Any word of very special importance may begin with a capital.

THE SILVER QUESTION.

In all civilized countries either gold or silver has been adopted as the standard of monetary value. The following is a list of the most important countries in the world, divided into three groups, those using (1) a gold standard, (2) a silver standard, (3) a double or variable standard. Of these last it may be said that the term "variable" is preferable to that of "double," inasmuch as the double standard never exists at one and the same time, gold or silver becoming alternately the standard, as the state of the exchanges makes the one or the other the more desirable as the practical medium of exchange.

Gold Standard.	Silver Standard.	Double or Variable Standard.
Australia. Brazil. British Colonies in Africa. British N. America. Denmark. Egypt. German Empire. Great Britain and Ireland. Liberia. New Zealand. Norway. Portugal. Sweden. Turkey.	Austria. Bolivia. China. Cochin China. Colombia. Ecuador. E. Indian Isles. Hungary. India. Japan. Mexico. Peru. Russia. Tripoli.	Argentine Republic. Belgium. Chili. Cuba. France. Greece. Hayti. Italy. Netherlands. Roumania. Spain. Switzerland. Venezuela. United States

WONDERS OF SCIENCE

A grain of gold has been found by Muncke to admit of being divided into ninety-five thousand millions of visible parts; that is, by the aid of a microscope magnifying one thousand times. A sovereign is thus capable of division into ten millions of millions of visible particles, being ten thousand times as many such particles as there are men, women and children in all the world.

SPONTANEOUS COMBUSTION—Liebig, in his "Familiar Letters on Chemistry," has proved the unsoundness of spontaneous combustion. Yet Dr. Lindley gives nineteen instances of something akin, or the rapid ignition of the human body by contact with flame as a consequence of the saturation of its tissues by alcohol.

VIBRATIONS OF THE AIR—If a person stand beneath a railway girder-bridge with an open umbrella over his head, when a train is passing, the vibration of the air will be distinctly felt in the hand which grasps the umbrella, because the outspread surface collects and concentrates the waves into the focus of the handle.

THE EARTH'S CENTER—All bodies weigh less the further removed they are from the center of the earth. A block of stone weighing 700 pounds upon the sea-shore, will weigh only 699 pounds if carried up a mountain three miles high. A pendulum oscillates more quickly at the poles than at the equator, because the earth is flatter by twenty-six miles at the poles—that is, the "bob" of the pendulum is that much nearer the earth's center, and therefore heavier, and so swings more quickly.

PHOTOGRAPHING THE INVISIBLE.

Prof. A. W. Wright of Yale University, who is in charge of Sloane Laboratory and professor of experimental physics at that institution, has recently confirmed in the most striking manner the experiments of Prof. Roentgen, of Wurzburg, Germany, in photographing objects behind opaque bodies by the use of cathode rays—in other words, in photographing objects invisible to the eye.

In making the photographs of invisible objects a highly sensitized plate is placed in an ordinary photographic plate holder. Right in front of it is placed the object to be photographed. In the case illustrated it was an ordinary lead pencil, and his purpose was to photograph the lead in the pencil.

Next to the object to be photographed is placed a high vacuum tube, technically known as Crooke's tube, in which there is an almost perfect vacuum. At the upper end of this tube the cathode or negative pole of the battery is attached, the positive pole being attached to the lower end of the tube and both poles being connected with an induction coil giving out very high potential discharges.

When the object to be photographed has been for a short time before the sensitized plate the latter is removed and developed like any other photo. and prints of the impression on it can be made to any number desired.

The results obtained by Prof Roentgen in his experiments have been most astonishing. A lecture was given in Berlin on the new discovery, and the lecturer, in its course, made several striking photographs. He took a purse, put a key and some coins into it, wrapped up the whole in black paper, and laid it on a photographic plate; in order to show the great penetrating power of the rays he laid on the top of the wrapped up purse a board two fingers in thickness.

He then exposed the whole to the rays electrically produced in the Roentgen tubes. After about fifteen minutes the letcurer took out the plate, developed it and had it thrown by limelight on a white curtain. With the greatest clearness were seen the key and the coins, while even the outlines of the purse were scarcely visible.

Among other photographs shown was one representing the hand of a man who, years ago, ran into it a piece of glass, which could not be extracted, and always penetrated deeper. The photograph of the skeleton of the hand produced by Prof. Roentgen's method showed this bit of glass quite distinctly.

Very interesting also was the reproduction of a photograph of a large metal plate. It appeared that the plate had been broken in different places, then welded together, and so smoothed over that one saw nothing of the joints. The cathode rays brought the fracture to light quite distinctly. Would not these cathode rays be useful in looking for flaws in our armor plates?

The cathode rays were put to practical use not long ago in a European hospital. and the results obtained demonstrated that they may become most valuable aids in modern surgery. There were two patients on whom operations were to be performed. The photographic pictures taken showed with the greatest clearness and precision the injuries caused by a revolver shot in the left hand of a man. and the position of the small projectile. In the other case, that of a girl, the position and nature of a malformation in the left foot were ascertained. The experiments were regarded as affording a means of determining the exact spot where an operation may be necessary.

Prof. Roentgen is of Dutch birth, and his full name is Wilhelm Conrad Roentgen.

Pile Driving on Sandy Soils.—The greatest force will not effect a penetration exceeding fifteen feet.

Foreign Nations and their Rulers.

WITH POPULATION, AREA IN SQUARE MILES, CAPITAL, FORMS OF GOVERNMENT, RULERS, ETC.

COUNTRIES.	Population.	Square Miles.	Capitals.	Form of Government.	Present Head.	Title.	Accessor.	Present Age.
China	404,180,000	4,179,559	Peking	Abs. Desp	Tsaiti'en	Emp	1875	20
British Empire	315,855,000	8,991,254	London	Lim. Mon	Victoria	Queen	1837	73
Russian Empire	202,683,124	8,459,229	St. Petersburg	Abs. Mon	Alexander III	Emp	1881	46
France & Colonies.	63,672,048	970,477	Paris	Republic.	Faure.	Pres	1887	54
United States	....	3,602,990	Washington	Republic.	G. Cleveland	Pres	1889	58
German Empire	45,234,061	211,168	Berlin	Lim. Mon	Wilhelm II.	Emp	1888	32
Austro-Hung. Emp	40,627,231	261,591	Vienna	Lim. Mon	Francis Joseph I.	Emp	1848	61
Japan	39,069,007	147,669	Tokio	Lim. Mon	Mutsuhito	Emp	1867	39
Holland & Colonies	33,042,238	778,187	The Hague	Lim. Mon	William III	King	1849	74
Turkish Empire	33,359,787	1,731,280	Constantin'ple	Abs. Mon	Abdul Hamid II	Sultan	1876	49
Italy	30,565,253	114,410	Rome	Lim. Mon	Humbert	King	1878	47
Spain & Colonies	24,872,621	361,953	Madrid	Lim. Mon	Alfonso XIII	King	....	5
Sokoto	12,600,000	178,000	Sokoto	Abs. Desp	....	Sultan	....	..
Corea	10,519,000	91,430	Suel	Monarchy	Li-hi	....	186	..
Brazil	14,002,335	3,209,878	Rio de Janeiro	Republic.	Fonseca	Pres	1889	...
Mexico	11.388,664	551,177	Mexico	Republic.	Porfirio Diaz	Pres	1884	..
Congo State	27,000,000	1,056,200	....	Fr. State.	Leopold	So'er'gn	1876	56
Persia	7,653,600	636,000	Teheran	Abs. Desp	Muzaffer-ed-Din	Shah	1896	43

FOREIGN NATIONS AND THEIR RULERS, ETC.—(Continued).

COUNTRIES	Population.	Square Miles.	Capitals.	Form of Government.	Present Head.	Title.	Accessor.	Present Age.
Portugal & Colonies	7,249,050	240,691	Lisbon	Lim. Mon	Carlos I	King	1889	28
Egypt	6,806,381	494,000	Cairo	Abs. Mon	Mohammed Teyfik	Khedive	1879	39
Sweden & Norway	6,554,448	295,714	Stockholm	Lim. Mon	Oscar II	King	1872	62
Morocco	6,500,000	314,000	Fez	Abs. Desp	Mulai Hassan	Sultan	1873	60
Belgium	6,030,043	11,373	Brussels	Lim. Mon	Leopold II	King	1865	56
Siam	5,700,000	280,550	Bangkok	Abs. Desp	Knulalonkorn I	King	1868	38
Roumania	5,376,000	46,314	Bucharest	Lim. Mon	Charles I	Prince	1866	52
Colombia	4,000,000	504,773	Bogoto	Republic.	Rafael Nunez	Pres.	1884	..
Afghanistan	4,000,000	279,000	Cabul	Abs. Desp	Abdur'hm'n Kahn	Amir	1880	..
Argentine Republic	3,026,000	109,513	Buenos Ayres.	Republic.	Julio A. Roca	Pres.	1880	..
Madagascar	3,000,000	228,570	Antananarivo.	Abs. Desp	Ranavalo III	Queen	1883	30
Abyssinia	7,360,000	244,000	....	Abs. Desp	Menelek II	Sultan	1889	..
Saxony	3,182,003	5,856	Dresden	Lim. Mon	Albert	King	1873	63
Peru	2,970,000	805,040	Lima	Republic.	Caceres	Pres.	1886	..
Switzerland	2,917,819	15,981	Berne	Republic.	L. Ruchonnet	Pres.	1890	..
Bolivia	2,325,000	772,548	Sucre	Republic.	Aniceto Arce	Pres.	1888	..
Bokhara	2,130,000	92,300	Samarcand	Abs. Desp	Abdul Ahad	Ameer	1885	31
Venezuela	2,121,988	632,695	Caracas	Republic.	Palacio	Pres.	1890	..
Chili	2,665,926	307,525	Santiago	Republic.	Balmaceda	Pres.	1886	..
Denmark	2,045,179	14,842	Copenhagen	Lim. Mon	Christian IX	King	1863	73

FOREIGN NATIONS AND THEIR RULERS, ETC.—(Continued).

COUNTRIES.	Population.	Square Miles.	Capitals.	Form of Government.	Present Head.	Title.	Accessor.	Present Age.
Bulgaria	3,154,375	24,700	Sofia	Lim. Mon	Ferdinand	Prince	1886	30
Greece	2,187,208	25,041	Athens	Lim. Mon	George I.	King	1864	46
Wurtemburg.	1,995,185	7,619	Stuttgart	Lim. Mon	Charles I	King	1864	68
Servia	2,013,691	18,855	Belgrave	Lim. Mon	Alexander I.	King	1882	15
Oman	1,600,000	82,000	Muscat	Abs. Mon	Seyyid fin Turki	Sultan	1888	..
Guatemala	1,427,116	46,774	N'wGuat'mala	Republic.	M. L. Barillas	Pres.	1886	..
Ecuador	1,146,000	248,312	Quito	Republic.	Flores	Pres.	1888	..
Tripoli.	1,010,000	399,000	Tripoli	Abs. Mon	Ahmed Rassim	Gov.Gen	1881	...
Transvaal	800,000	110,193	Pretoria	Republic.	Kruger	Pres.	1883	..
Salvador	664,513	7,228	San Salvador	Republic.	Fr. Menendez	Pres.	1887	..
Uruguay	651,112	72,112	Montevido	Republic.	Hereira y Obes	Pres.	1890	..
Paraguay	476,000	92,000	Asuncion	Republic.	Escobar	Pres.	1886	..
Honduras	458,000	46,400	Tegucigalpa	Republic.	Louiz Bogran	Pres.	1883	..
Nicaragua	400,000	51,660	Managua	Republic.	Guera	Pres.	....	..
Dominica	300,000	20,596	San Domingo.	Republic.	Gen. Bellini	Pres.	1884	..
Montenegro	245,380	3,630	Cetigno	Abs. Mon	Nicholas	Prince	1860	50
Costa Rica	205,730	19,985	Jan Jose	Republic.	Bernado Soto	Pres.	1885	...
Orange Free State	133,518	41,484	Bloemfontein.	Republic.	Judge Reitz	Pres.	1889	..
Hayti	572,000	10,204	Port-au-Prince	Republic.	Hyppolite	Pres.	1889	..
Hawaii	80,578	6,677	Honolulu	Lim. Mon	Lilinokalani	Queen	1891	..

HOW THE PRESIDENTS DIED.

GEORGE WASHINGTON—His death was the result of a severe cold, contracted while riding around his farm in a rain and sleet storm on December 10, 1799. The cold increased, and was followed by a chill, which brought on acute laryngitis. His death occurred on December 14, 1799. He was 68 years of age.

JOHN ADAMS—He died from old age, having reached his 91st milestone. Though active mentally, he was nearly blind and unable to hold a pen steadily enough to write. He passed away without a pain on July 4, 1826.

THOMAS JEFFERSON—He died at the age of 83, a few hours before Adams, on July 4, 1826. His disease was chronic diarrhea, superinduced by old age, and, his physician said, the too free use of the waters of the White Sulphur Springs.

JAMES MADISON—He, too, died of old age, and, peacefully, on June 28, 1836. His faculties were undimmed to the last. He was 85.

JAMES MONROE—At the time of his death, which occurred in the 73d year of his age, on July 4, 1831, assigned to enfeebled health.

JOHN QUINCY ADAMS—He was stricken with paralysis on February 21, 1848, while addressing the Speaker of the House of Representatives, being at the time a Member of Congress. He died in the rotunda of the Capitol. He was 81 years of age.

ANDREW JACKSON—He died on June 8, 1845, 78 years old. He suffered from consumption, and finally dropsy, which made its appearance about six months before his death.

MARTIN VAN BUREN—He died on July 24, 1862, from a violent attack of asthma, followed by catarrhal affections of the throat and lungs. He was 80 years of age.

WILLIAM HENRY HARRISON.—The cause of his death was pleurisy, the result of a cold which he caught on the day of his inauguration. This was accompanied with severe diarrhea, which would not yield to medical treatment. His death occurred on April 4, 1841, a month after his inauguration. He was 68 years of age.

JOHN TYLER—He died on January 17, 1862, at the age of 72. I have been unable to ascertain the cause of his death.

JAMES K. POLK—In the spring of 1849 he was stricken with a slight attack of cholera while on a boat going up the Mississippi River. Though temporarily relieved, he had a relapse on his return home and died on June 15, 1849, aged 54 years.

ZACHARY TAYLOR—He was the second President to die in office. He is said to have partaken immoderately of ice-water and iced milk, and then later of a large quantity of cherries. The result was an attack of cholera morbus. Another authority attributes his death to a severe cold. He was 66 years old.

MILLARD FILMORE—He died from a stroke of paralysis on March 8, 1874, in his 74th year.

FRANKLIN PIERCE—His death was due to abdominal dropsy, and occurred on October 8, 1869, in the 65th year of his life.

JAMES BUCHANAN—His death occurred on June 1, 1868, and was caused by rheumatic gout. He was 77 years of age.

ABRAHAM LINCOLN—He was shot by J. Wilkes Booth at Ford's Theater, Washington, D. C., on April 14, 1865, and died the following day, aged 56.

ANDREW JOHNSON—He died from a stroke of paralysis, July 31, 1875, aged 67.

The deaths of Grant, Garfield and Arthur are recent enough to be remembered by all.

United States Pension Statistics.

Number of Pension Claims, Pensioners and Disbursements, 1861-90.

Fiscal year ending June 30.	Army and Navy. Claims allowed.		Total number of applications filed.	Total number of claims allowed.
	Invalids.	Widows, etc.		
1861	....	....	....	....
1862	413	49	2,487	462
1863	4,121	3,763	49,332	7,884
1864	17,041	22,446	53,599	39,487
1865	15,212	24,959	72,684	40,171
1866	22,883	27,294	65,256	50,177
1867	16,589	19,893	36,753	36,482
1868	9,460	19,461	20,768	28,921
1869	7,292	15,904	26,066	23,196
1870	5,721	12,500	24,851	18,221
1871	7,934	8,399	43,969	16,562
1872	6,468	7,244	26,391	34,333
1873	6,551	4,073	18,303	16,052
1874	5,937	3,152	16,734	10,462
1875	5,760	4,736	18,704	11,152
1876	5,360	4,376	23,523	9,977
1877	7,282	3,861	22,715	11,326
1878	7,414	3,550	44,587	11,962
1879	7,242	3,379	57,118	31,346
1880	10,176	4,455	141,466	19,545
1881	21,394	3,920	31,116	27,394
1882	22,946	3,999	40,939	27,664
1883	32,014	5,303	48,776	38,162
1884	27,414	6,366	41,785	34,192
1885	27,580	7,743	40,918	35,767
1886	31,937	8,610	49,895	40,857
1887	35,283	11,217	72,465	55,194
1888	44,893	15,359	75,726	60,252
1889	36,830	11,924	81,220	51,912
1890	50,395	14,612	105,044	66,637
Total	490,402	278,004	1,353,190	855,758

United States Pension Statistics—Continued.

Fiscal y'r ending June 30.	Number of pensioners on the roll and the amount paid for pensions, with cost of disbursements.			
	Invalids.	Widows, etc.	Total.	Disbursements.
1861......	4,337	4,299	8,636	$ 1,072,462.00
1862......	4,341	3,818	8,159	790,385.00
1863......	7,821	6,970	14,791	1,025,140.00
1864......	23,479	27,656	51,135	4,564,617.00
1865......	35,880	50,106	85,986	8,525,153.00
1866......	55,652	71,070	126,722	13,459,996.00
1867......	69,565	83,678	153,183	18,619,956.00
1868......	75,957	93,686	169,643	24,010,982.00
1869......	82,859	105,104	187,963	28,422,884.00
1870......	87,521	111,165	198,686	27,780,812.00
1871......	93,394	114,101	207,495	33,077,384.00
1872......	113,954	118,275	232,229	30,169,341.00
1873......	119,500	118,911	238,411	29,185,290.00
1874......	121,628	114,613	236,241	30,593,750.00
1875......	122,989	111,832	234,821	29,683,117.00
1876......	124,239	107,898	232,137	28,351,600.00
1877......	128,723	103,381	222,104	28,580,157.00
1878......	131,649	92,349	223,998	26,844,415.00
1879......	138,615	104,140	242,755	33,780,526.00
1880......	145,410	105,392	250,802	57,240,540.00
1881......	164,110	104,720	268,830	50,626,539.00
1882......	182,633	103,064	285,697	54,296,281.00
1883......	206,042	97,616	303,658	60,431,973.00
1884......	225,470	97,286	322,756	57,273,537.00
1885......	247,146	97,979	345,125	65,693,707.00
1886......	270,346	95,437	365,783	64,584,270.00
1887......	306,298	99,709	406,007	74,815,486.85
1888......	343,701	108,857	452,557	79,646,146.37
1889......	351,284	173,241	489,725	88,275,113.28
1890......	415,654	122,290	537,944	106.493,890.19
Total..	....	....	....	$1,158,712,303.36

THE AVERAGE VELOCITIES OF VARIOUS BODIES.

A man walks 3 miles per hour or 4 feet per second.
A horse trots 7 " " 10 " "
A horse runs 20 " " 29 " "
Steamboat runs 20 " " 26 " "
Sailing vessel runs 10 miles per hour or 14 feet per second.
Rapid rivers flow 3 " " 4 " "
A moderate wind blows 7 miles per hour or 10 feet per second.
A storm moves 36 miles per hour or 52 feet per second.
A hurricane moves 80 " " 117 " "
A rifle ball 1000 " " 1466 " "
Sound 743 " " 1142 " "
Light, 192,000 miles per second.
Electricity, 288,000 miles per second.

MORMONS, "MORMON WAR."

A sect of religious fanatics that has arisen within the present generation, and gained over many converts. Its founder was Joseph Smith, an American. Brigham Young succeeded, after the death of Smith, to the post of prophet, and retained it until his death, at Salt Lake City, Aug. 29, 1877. In February, 1857, an armed body of Mormons dispersed the United States district court, in Utah, and openly defied the laws of the nation, because their territory was not admitted as a State. President Buchannan appointed Colonel Cumming governor of the territory, and sent troops to suppress the rebellion. Young issued a manifesto, and determined on resistance to national authority, but when the governor arrived there, in April, 1858, Young concluded to surrender, and so the "Mormon war" ended. After remaining for a time, the troops, in May, 1860, left the territory.

Uncle Sam.—The popular title for the United States. In the year 1812, a large quantity of provisions for the army was purchased at Troy, N. Y., by Elbert Anderson, a government contractor. The goods were inspected by two brothers, Ebenezer and Samuel Wilson. The last-named was invariably known among the workmen as "Uncle Sam." The packages were marked E. A.—U. S. On being asked the meaning of these initials, a workman jokingly replied that he did not know unless they meant Elbert Anderson and Uncle Sam. So the title became current among workmen, soldiers and people, and the United States Government is known now by those who affectionately call it Uncle Sam.

CIVIL SERVICE REFORM.

In accordance with an act of Congress, passed March 3, 1871, a board of seven commissioners was appointed by President Grant to inquire into the matter of reforming the civil service. During President Hayes' administration an order was issued to the following effect: "No officer should be required or permitted to take part in the management of political organizations, caucuses, conventions, or election campaigns. Their right to vote and to express their views on public questions, either orally or through the press, is not denied, provided it does not interfere with the discharge of their official duties. No assessment for political purposes on officers or subordinates should be allowed." The credit for starting the movement in favor of this object belongs to President Grant, who recommended it in his second annual message, December 5, 1870.

KNOW-NOTHINGS.

The name of a secret political party which originated in 1853. The party, or rather society was first formed by a person of some notoriety, who called himself Ned Buntline—the writer of sea stories.

Ned was once a midshipman in the United States navy, but left the service and commenced the business of founding a secret order, of so exclusive a character that none were to be admitted as members whose grandfathers were not natives of the United States. Ned gave instructions to his followers to reply to all questions in respect to the movements of the new party "I don't know." So they were at first called don't-knows, and then know-nothings, by outsiders. The *Crusader*, a party organ, printed the principles of the society as follows: Repeal of all naturalization laws; none but native Americans for office; a pure American common school system; war to the hilt on Romanism. In the year 1855-6 the slavery question had assumed paramount importance, and the civil war between the free state men and the pro-slaveryites in the territory of Kansas, so overshadowed the public mind, that foreign citizenship was forgotten, and the know-nothings as a body disappeared. The nearest approach to know-nothingism or Americanism, in 1856 (as indicated by the name), was the American party, whose nominees for President and Vice-President were Millard Fillmore and Andrew J. Donelson, of Tennessee. In that year there was a general excitement, and crush of political elements, which resulted in the complete annihilation of the American and Whig parties. Thereupon rose the Republican party

ARCHIMEDEAN SCREW, OR SPIRAL PUMP.

It is so-called for Archimedes, its inventor. It consists of a pipe twisted spirally round a cylinder, which, when at work, is supported in an inclined position. The lower end of the pipe is immersed in water, and when the cylinder is made to revolve on its own axis, the water is raised from bend to bend in the spiral pipe until it flows out at the top.

A NEW AND PROFITABLE INDUSTRY.

TROPIC AND SEMI-TROPIC FRUIT GROWING.

In addition to the tropic and semi-tropic fruits and nuts grown for home and family use through the United States, there were, in the census year 1890, 13,515 acres of almond, 677.50 of banana, 169.88 of citron, 9,864 of cocoanut, 4,477 of fig, 550 of guava, 1,362.25 of kaki, 7,256 of lemon, 495.58 of lime, 12,180 of madeira nut, 7,097 of olive, 184,003 of orange, 2,189.50 of pineapple, 171.89 of pomelo, and 27,419.50 of pecan trees, representing 658,566 bearing and 800,010 nonbearing almond trees, 577,782 bearing banana plants, 4,237 bearing and 14,110 nonbearing citron trees, 123,227 bearing and 1,199,549 nonbearing cocoanut trees, 138,186 bearing and 285,201 nonbearing fig trees, 32,943 bearing and 120,529 nonbearing guava trees, 58,390 bearing and 124,522 nonbearing kiki trees, 167,663 bearing and 498,784 nonbearing lemon trees, 19,096 bearing and 44,255 nonbearing lime trees, 188,409 bearing and 411,248 nonbearing madeira nut trees, 278,380 bearing and 331,022 nonbearing olive trees, 3,885,890 bearing and 9,705,246 nonbearing orange trees, 21,750,000 pineapple plants, 3,279 bearing and 12,867 nonbearing pomelo trees, and 214,988 bearing and 657,980 nonbearing pecan trees.

Excluding pineapples and bananas, which are all counted as bearing plants, as they commence fruiting within a year of planting, it will be noted that the average number of all nonbearing trees is about double that of the bearing trees, the product of which in the census year, was as far as reported, valued at $14,116,226.59, divided as follows: almond, $1,525,109,80; banana, $280,653.75; cocoanut, $251,217.41; fig, $307,271.76; lemon, $988,099.92; lime, $62,496.90; madeira nut, $1,256,958; olive, $386,368.32; orange, $6,602,099.06; pineapple, $812,159.17; pomelo, $27,216, and pecan, $1,616,576.50. On the basis of present prices, with all the nonbearing trees in fruitage, the next census (1900) ought to show a value of product of *more than $50,000,000*. As a forecast of the future growth of these branches of horticulture, the above figures are most interesting.

ARTESIAN WELLS

So called from the French province of Artois, whence they are supposed to originate. It is the name given to a peculiar kind of bored well, in which the water rises to the surface and overflows. In the United States any deep-bored well is called *artesian*, even if the water has to be pumped from a considerable depth. The geological conditions permitting an overflow without pumping are not general—since it is necessary that the region should have a more or less complete basin-structure, and that there should be a series of permeable, covered by impermeable, beds. Artesian wells vary in depth from less than 100 feet to nearly 4,000 feet, the deepest borings being for petroleum. The total number of artesian wells on farms, in June 1890, in the states and territories forming the western half of the United States, was 8,097, representing an estimated aggregate investment of $1,988,461.26. Complete statistics, concerning the depth, cost, discharge, and other features of 2,971 of such wells, fairly distributed through the various states and counties from which they are reported, have been obtained from the owners, and from the averages derived from such statistics, the number of artesian wells used for the purposes of irrigation is computed at 3,930; the average depth per well, 210.41 feet; the average cost per well, $245.58; the total discharge of water per minute, 440,719.71 gallons, or 54.43 gallons per well per minute; the average area irrigated per well, 13.21 acres, and the average cost of water per acre irrigated, $18.55. Over one-half of these wells are in the State of California, where 38,378 acres of agricultural land were irrigated by artesian water. Utah stands second in the number of artesian wells used for irrigation purposes and Colorado in the area of land thus irrigated.

CURIOSITIES OF THE BIBLE.

The Bible contains 3,566,480 letters, 773,746 words, 31,173 verses, 1,189 chapters and 66 books. The word AND occurs 46,277 times. The word LORD occurs 1,855 times. The word REVEREND occurs but once, which is in the 9th verse of the 111th Psalm. The middle verse is the 8th verse of the 118th Psalm. The 21st verse of the 7th chapter of Ezra contains all the letters of the alphabet, except the letter J. The longest verse is the 9th verse of the 8th chapter of Esther. The shortest verse is the 35th verse of the 11th chapter of St. John. There are no words or names of more than six syllables.

STATE FLOWERS.

The following are "State Flowers," as adopted by the votes of the public school scholars of the respective States:

Alabama	Golden Rod
Colorado	Columbine
Delaware	Peach Blossom
Idaho	Syringia
Iowa	Rose
Maine	Pine Cone and Tassal
Minnesota	Cypripodium or Moccasin Flower.
Montana	Bitter Root
Nebraska	Golden Rod
New York	Rose
North Dakota	Wild Rose
Oklahoma Territory	Mistletoe
Oregon	Golden Rod
Utah	Sego Lily
Vermont	Red Clover

In other States the scholars have not yet taken action. In Rhode Island and Wisconsin a vote was taken for a "State Tree," resulting in the selection of the Maple. In the State of Washington the Rhododendron is the choice of many, but has not been adopted.

The universally, if not officially, recognized National Flower is THE GOLDEN ROD.

THE GREAT GAME OF GOLF.

Originally a Scottish sport, it grew in favor all over England and its colonies, and finally reached our shores, where it has been daily growing in popularity. It is played in the open air with mallets and wooden balls, and tends to develop every muscle in the body. The game extends over long stretches of ground and necessitates lots of walking through "vale and glen."

The biggest event of the season of 1895 was the championship tournament, being the first held under the auspices of the United States Golf Association, at Newport, Oct. 8-12. Mr. Theodore A. Havemeyer, President of the Association and of the Newport Club, presented a $1,000 perpetual silver cup for the amateur championship, the first golf trophy ever offered for competition. The winners were Charles B. Macdonald, Chicago Golf Club, first and amateur champion; C. E. Sands, St. Andrews Club, second; Dr. Charles Claxton, Philadelphia Country Club, third; F. J. Amory, Brookline Country Club, fourth.

The professional championship was won by H. Rawlius, Newport Golf Club; Willie Dunn, holder of the championship in 1894, Shinnecock Hills Club, second; Jas. Fonlis, Chicago Golf Club, third; W. F. Davis, Newport, and Willie Campbell, Brookline Country Club, a tie for fourth place and the money divided.

Charles Macdonald, the amateur champion, is a Scotchman. He won the international amateur tournament at Niagara-on-the-Lake, Canada, in 1895, defeating A. W. Smith, the Canadian champion, by one hole.

VALUES OF FOREIGN COINS.

As Adopted by the United States Treasury Department, April 1, 1892.

COUNTRY.	STANDARD.	MONETARY UNIT.	VALUE IN U. S. GOLD.	COINS.
Argentine Republic	Gold and silver	Peso	$0.96,5	Gold—Argentine ($4.82,4) and ½ argentine. Silver—Peso and divisions.
Austria-Hungary	Silver	Florin	.32,8	Gold—4 florins ($1.92,9), 8 florins ($3.85,8), ducat ($2.28,7), and 4 ducats ($9.15,8). Silver—1 and 2 florins.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 francs. Silver—5 francs.
Bolivia	Silver	Boliviano	.66,5	Silver—Boliviana and divisions.
Brazil	Gold	Milreis	.54,6	Gold—5, 10 and 20 milreis. Silver—½, 1 and 2 milreis.
British Possessions, N. Amer.*	Gold	Dollar	1.00	
Central American States	Silver	Peso	.66,5	Silver—Peso and divisions.
Chili	Gold and silver	Peso	.91,2	Gold—Escudo ($1.82,4), doubloon ($4.56,1), condor ($9.12,3). Silver—Peso and divisions.
China	Silver	Tael { Shanghai Haikwan (customs)	.98,2 1.09,3	
Columbia	Silver	Peso	.66,5	Gold—Condor ($9.64,7) and double condor. Silver—Peso.
Cuba	Gold and silver	Peso	.92,6	Gold—Doubloon ($5.01,7). Silver—Peso.
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Ecuador	Silver	Sucre	.66,5	Gold—Condor ($9.64,7) and double condor. Silver—Sucre and divisions.
Egypt	Gold	Pound (100 piastres)	4.94,3	Gold—Pound (100 piastres), 50, 20, 10, 5 piastres. Silver—1, 2, 5, 10, 20 piastres.
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50 and 100 frs. Silver—5 frs.
German Empire	Gold	Mark	.23,8	Gold—5, 10 and 20 marks.

VALUES OF FOREIGN COINS—CONTINUED,

COUNTRY.	STANDARD.	MONETARY UNIT.	VALUE IN U. S. GOLD	COINS.
Great Britain	Gold	Pound sterling	$4.86,6½	Gold—Sovereign (£ sterling) and ½ sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50 and 100 drachmas. Silver—5 drachmas.
Hayti	Gold and silver	Gourde	.96,5	Silver—Gourde.
India	Silver	Rupee	.31,6	Gold—Mohur ($7.10,5). Silver—Rupee and divisions.
Italy	Gold and silver	Lira	19,3	Gold—5, 10, 20, 50, 100 liras. Silver—5 liras.
Japan	†Gold and silver	Yen { Gold Yen { Silver	.99,7 .71,6	Gold—1, 2, 5, 10 and 20 yen. Silver—Yen.
Liberia	Gold	Dollar	1.00	
Mexico	Silver	Dollar	.72,2	Gold—Dollar ($0.98,3), 2½, 5, 10, 20 dollars. Silver—Dollar (or peso) and divisions.
Netherlands	Gold and silver	Florin	.40,2	Gold—10 florins. Silver—½, 1, 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—2 dollars ($2.02,7÷).
Norway	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Peru	Silver	Sol	66,5	Silver—Sol and divisions.
Portugal	Gold	Milreis	1.08	Gold—1, 2, 5 and 10 milreis.
Russia	Gold and silver	Rouble. { Gold Rouble. { Silver	.77,2 .53,1	Gold—Imperial ($7.71,8), ½ imperial ($3.86,0).‡ Silver—¼, ½ and 1 rouble.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas. Silver—5 pesetas.
Sweden	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50 and 100 francs. Silver—5 francs.
Tripoli	Silver	Mahbub of 20 piastres	.60	
Turkey	Gold	Piastre	.04,4	Gold—25, 50, 100, 250 and 500 piastres.
Venezuela	Silver	Bolivar	.13,3	Gold—5, 10, 20, 50 and 100 bolivers. Silver—5 bolivars.

* Except Newfoundland.

† Gold the nominal standard, silver practically the standard.

‡ Coined since January 1, 1886; old half-imperial=$3.98,6.

Strength of Materials.

Strength of Tie Bars, Suspension Rods, etc.

Breaking Weight per Square Inch.	Breaking Weight per Square Eighth.	Materials.	Breaking Weight per Circular Eighth.	Breaking Weight per Circular Inch.
tons	lbs.		lbs.	tons
Average. 50	1,750	Steel	1,375	39.3
20	700	Wrought Iron	550	15.7
7	245	Cast Iron	192	5.5
8	280	Copper and Brass	220	6.3
5	175	Oak, Fir, Beech and Elm	136	3.9

Breaking weight — tons given per sq. or circular *inch;* or lbs. given per sq. or circular *eighths.* multiplied by the area of the cross section in *either* measure.

For safe working divide the result by 4.

Weight of Snow.

Snow weighed at Washington at different times in 1887–8–9, weighed from 5½ to 10¾ lbs. per cubic foot. In Canada it weighed 14 lbs. 4 oz. on falling; 21 lbs. 4 oz. twenty-four hours after falling, temperature 8° Fahr.; 28 lbs. 10 oz. seventy-two hours after falling, temp. 30° Fahr.

Tables of Speeds (Approximate) for Wood-Working Machinery.

Circular saws for ripping soft wood, 9,000 ft. per min. at the periphery. Ripping hard wood, 6,800 ft. per min. at the periphery. Cross-cutting soft wood, 10.000 feet per min., and cross-cutting hard wood, 7,500 ft. per min.

Mill or reciprocating saws, designed to carry not more than one saw per 1 in. width of saw or swing frame. To cut logs up to 4 ft. sq., 110 revs. per min.; 3 ft. 6 in. sq., 120 revs per min.; 3 ft. sq., 125 revs. per min.; 2 ft. 6 in. sq., 135 revs. per min.; 2 ft. sq., 155 revs. per min.; 1 ft. 6 in. sq., 180 revs. per min.

Double Equilibrium Deal Sawing Frames (balance swing frames). To cut two deals up to 14 in. × 5 in., 300 revs. per min.; 18 in. × 6 in., 260 revs. per min.; 24 in. × 7 in., 220 revs. per min.

Single Deal Sawing Frames.—To cut one deal up to 11 in. × 3 in., 260 revs. per min.; 14 in. × 4 in., 250 revs. per min.; 18 in. × 6 in., 215 revs. per min.

Single-bladed Frames.—1,500 feet per min.

Band Saws.—Blades running on wheels up to 3 ft. diameter. For Sawing Soft Woods.—Traverse of saw-blade per min.

up to 4,500 ft.; do. hard wood, 3,500 ft.: do. very hard wood. ivory, etc., up to 750 ft.; do. iron, up to 250 ft.

Jigger Saws, to cut 12 in. deep, 800 to 1,000 revs. per min.

Planing Machines.—The cutting edges of planing and molding irons—when two only are employed and arranged on cutter blocks, varying in diameter from 4 in. to 9 in. in diameter—should be speeded to travel from 5,000 ft. to 6,000 ft. per min.

Mortising Machines (Reciprocating).—Heavy machines to mortise up to 3 in. wide, 175 to 275 strokes per min.; 1 in. wide, 200 to 300 strokes; 1 in. wide (movable table), 275 to 400 strokes.

Rotary Mortising and Boring Machines.—Soft wood, 2,000 revs. per min.; hard wood, 1,200 per min.

Tenoning Machines.—Heavy machines, 2,500 ft. to 3,500 ft. of cutting edge per min. Light machines, 3,000 ft. to 4,000 ft. of cutting edge per min.

Emery wheels for saw-sharpening, etc., 4,500 ft. to 6,000 ft.

Flow and Fall of Rivers and Canals.

A river is said to be sluggish when it flows at the rate of about 1 mile an hour; ordinarily swift, 2 miles an hour; very rapid, 5 miles an hour; a torrent, 6 miles an hour.

Drainage, Etc.

FRESH WATER.

One cubic foot of fresh water weighs 1,000 ounces, or 62.5 lbs. avoirdupois, and contains 6.2321 Imperial gallons.

One foot in depth has a pressure of .434 lb. to the square inch.

One foot in depth has a pressure of 62.5 lbs. to the square foot.

35.84 feet in depth has a pressure of 2,240 lbs., or 1 ton to the square foot.

One cylindrical foot weighs 785.4 ounces, or 49.08 lbs. avoirdupois, and contains 4.8947 Imperial gallons.

One cylindrical foot in depth has a pressure of .34 lb. on an area 1 inch in diameter.

One cylindrical foot in depth has a pressure of 49.08 lbs. on an area 1 foot in diameter.

45.64 cylindrical feet in depth has a pressure of 2,240 lbs., or one ton on an area 1 foot in diameter.

The quantity of water in 1 inch in depth of rainfall on an Imperial acre of surface is 3,630 cubic feet, which is 22,622.523 Imperial gallons, or 101.28 tons. 3,630 cubic feet of rain falling in 24 hours is 2.52 cubic feet per minute.

SEA WATER.

One cubic foot weighs 64.25 lbs.

One cylindrical foot weighs 50.46195 lbs.

34.887 feet in depth has a pressure of 2,240 lbs., or 1 ton to the square foot.

Relative Weights of Metals.

The weight of Bar Iron being		1.
	Cast Iron	= .95
	Steel	= 1.01
	Copper	= 1.16
	Brass	= 1.09
	Lead	= 1.48
The weight of Cast Iron being		1.
	Bar Iron	= 1.07
	Steel	= 1.08
	Brass	= 1.16
	Copper	= 1.21
	Lead	= 1.56
The weight of Yellow Pine being		1.
	Cast Iron	= 16.
	Steel	= 17.2
	Copper	= 19.3
	Brass	= 18.4
	Lead	= 24.
The weight of Brass being		1.
	Bar Iron	= .92
	Cast Iron	= .86
	Steel	= .93
	Copper	= 1.05
	Lead	= 1.35
The weight of Copper being		1.
	Bar Iron	= .87
	Cast Iron	= .82
	Steel	= .88
	Brass	= .93
	Lead	= 1.28
The weight of Lead being		= 1.
	Bar Iron	= .68
	Cast Iron	= .64
	Steel	= .69
	Brass	= .74
	Copper	= .78

Lightning Conductors.

Copper is the best material for conductors. When circumstances are not such as to promote corrosion iron may be used, but of larger dimensions. Its conductivity is about one-fifth that of copper.

Copper lightning conductors should be of the following dimensions:—

Rods ½″ diam., tubes ⅝″ diam., ⅛″ thick, or bands 1½″ wide, ⅔″ thick.

Iron lightning conductors should be either solid rods 1″ diam., or bands 2″ wide, ⅜″ thick.

Lightning conductors afford protection over a circle whose radius equals their height from the ground; formerly considered twice.

Weight and Specific Gravities of Liquids.

Liquids at 32 deg. Fahr.	Weight of one cubic foot.	Weight of one gallon	Specific gravity.
	Pounds.	pounds.	Water=1.
Mercury	848.7	136.0	13.596
Bromine	185.1	29.7	2.966
Sulphuric acid, max. concentratn.	114.9	18.4	1.84
Nitrous acid	96.8	15.5	1.55
Chloroform	95.5	15.3	1.53
Water of the Dead Sea	77.4	12.4	1.24
Nitric acid, of commerce	76.2	12.2	1.22
Acetic acid, maximum concentratn.	67.4	10.8	1.08
Milk	64.3	10.3	1.03
Sea water, ordinary	64.05	10.3	1.026
Pure water (distlld.) at 39° 1.F.	62.425	10.0	1.000
Wine of Bordeaux	62.1	9.9	0.994
Wine of Burgundy	61.9	9.9	0.991
Linseed oil	58.7	9.4	0.94
Poppy oil	58.1	9.3	0.93
Rape seed oil	57.4	9.2	0.92
Whale oil	57.4	9.2	0.92
Olive oil	57.1	9.15	0.915
Turpentine oil	54.3	8.7	0.87
Potato oil	51.2	8.2	0.82
Petroleum	54.9	8.8	0.88
Naphtha	53.1	8.5	0.85
Ether, nitric	69.3	11.1	1.11
" sulphurous	67.4	10.8	1.08
" nitrous	55.6	8.9	0.89
" acetic	55.6	8.9	0.89
" hydrochloric	54.3	8.7	0.87
" sulphuric	44.9	7.2	0.72
Alcohol, proof spirit	57.4	9.2	0.92
Alcohol, pure	49,3	7.9	0.79
Benzine	53.1	8.5	0.85
Wood spirit	49.9	8.0	0.80

Weight of Liquids per Gallon.

Sulphuric acid	in lbs.	18.5	Whale oil	in lbs.	9.2
Nitric acid	"	12.7	Oil of turpentine	"	8.7
Muriatic acid	"	12.	Petroleum	"	8.8
Alcohol of commerce	"	8.2	Tar	"	10.1
Alcohol proof spirit.	"	9.2	Vinegar	"	10.1
Naphtha	"	8.5	Water, distilled	"	10
Linseed oil	"	9.4	Salt water	"	10.3

Number of Union Soldiers Furnished by Each State During the Rebellion.

State or Territory.	No. of Soldiers.	State or Territory.	No. of Soldiers.
Alabama	2,576	Mississippi	545
Arkansas	8,289	Missouri	109,111
California	15,725	Nebraska	3,157
Colorado	4,903	Nevada	1,080
Connecticut	57,379	New Hampshire	34,629
Dakota Territory	206	New Jersey	81,010
Delaware	13,670	New Mexico T.	6,561
District of Columbia	16,872	New York	467,047
Florida	1,290	North Carolina	3,156
Illinois	259,147	Ohio	319,659
Indiana	197,147	Oregon	1,810
Iowa	76,309	Pennsylvania	366,107
Kansas	20,151	Rhode Island	23,699
Kentucky	59,025	Tennessee	31,092
Louisiana	5,224	Texas	1,965
Maine	72,114	Vermont	35,262
Maryland	50,316	Washington T	964
Massachusetts	152,048	West Virginia	32,068
Michigan	89,372	Wisconsin	96,424
Minnesota	25,052		

Signs and Symbols.

= This is the sign of equality. It denotes that the quantities so connected are equal to one another; thus, 3 feet=1 yard.

+ This is the sign of addition, and signifies plus or more; thus, $4+3=7$.

— This is the sign of subtraction, and signifies minus or less; thus, $4-3=1$.

× This is the sign of multiplication, and signifies multiplied by or into; thus, $4\times3-12$.

÷ This is the sign of division, and signifies divided by; thus, $4\div2=2$.

( ) { } [ ] These signs are called brackets, and denote that the quantities between them are to be treated as one quantity; thus,

$$5\left\{3(4+2)-6(3-2)\right\}=5\,(18-6)=60.$$

Letters are often used to shorten or simplify a formula. Thus, supposing we wish to express length × breadth × depth, we might put the initial letters only, thus, $l\times b\times d$, or, as is usual when algebraical symbols are employed, leave out the sign × between the factors and write the formula $l\,b\,d$.

When it is wished to express division in a simple form, the divisor is written under the dividend; thus, $(x+y)\div z$

$$\frac{x+y}{z}$$

°, ′, ″ These signs are used to express certain angles in degrees, minutes, and seconds; thus, 25 degrees 4 minutes 21 seconds would be expressed 25° 4′ 21″.

Note.—The two latter signs are often used to express feet and inches; thus 2 feet 6 inches may be written 2′ 6″.

$\sqrt{}$ This sign is called the radical sign, and placed before a quantity indicates that some root of it is to be taken, and a small figure placed over the sign, called the exponent of the root, shows what root is to be extracted.

Thus $\sqrt[2]{a}$ or $\sqrt{a}$ means the square root of *a*.
$\sqrt[3]{a}$ " cube "
$\sqrt[4]{a}$ " fourth "

g This sign is used to denote the force of gravity at any given latitude.

π The Greek letter pi is invariably used to denote 3·14159; that is, the ratio borne by the diameter of a circle to its circumference.

Note.—When the figure ^{2} is affixed to any number, as diameter^2 or 12^2, the number is to be squared, as $12 \times 12 = 144$, the square; and with ^{3} affixed, the number is to be cubed, *i. e.*, multiplied twice by itself, as $6^3 = 6 \times 6 \times 6 = 216$, the cube of 6.

The Atmosphere.

Weight of atmosphere
=14·706 lbs. per square inch.
=29·92 inches of mercury.
=33·7 feet of water.

The barometer falls about ½″ for every increase of altitude of 500 feet, with a mean temperature of 50° Fahr.

Composition of Atmosphere.—By volume 20·8 oxygen, 79·2 nitrogen; by weight, 23 oxygen, 77 nitrogen. It also contains a little ammoniacal gas, and from 3 to 6 parts in 10,000 of its volume of carbonic acid.

Height of the Barometer at Different Levels above the Surface of the Earth.

Feet.	Inches.	Miles.	Inches.
1,000	28·91	2	20·29
2,000	27·86	3	16·68
3,000	26·85	4	13·72
4,000	25·87	5	11·28
5,000	24·93	10	4·24
1 mile.	24·67	15	1·6

Measurement of Heights by a Barometer.

Approximate Rule.—For a mean temperature of 55 degrees, x, required difference in height in feet, h, the height of the mercury at the lower station, h', the height of the mercury at the upper station in feet.

$$55000 \times \frac{h-h'}{h+h'} = x.$$ Add $\frac{1}{440}$ of this result

for each degree which the mean temperature of the air at the two stations exceeds 55 degrees, and deduct as much for each degree below 55 degrees.

Weight and Specific Gravities of Gases and Vapors.

Gases at 32° Fahr. and under one atmosphere of pressure.	Vol. of 1 lb weight.	Weight of 1 cubic feet.	Specific gravity
	cubic feet	pounds.	Air=1.
Vapor of mercury (ideal)......	1.776	0.563	6.9740
Vapor of bromine..............	2.236	0.447	5.5400
Chloroform....................	2.337	0.428	5.3000
Vapor of turpentine...........	2.637	0.378	4.6978
Acetic ether..................	4.075	0.245	3.0400
Vapor of benzine..............	4.598	0.217	2.6943
Vapor of sulphuric ether......	4.790	0.209	2.5860
Vapor of ether (?)............	4.777	0.206	2.5563
Chlorine......................	5.077	0.197	2.4400
Sulphurous acid...............	5.513	0.1814	2.2470
Alcohol.......................	7.679	0.1302	1.6130
Carbonic acid (actual)........	8.101	0.12344	1.5290
Carbonic acid (ideal).........	8.157	0.12259	1.5186
Oxygen........................	11.205	0.089253	1.1056
Air...........................	12.387	0.080728	1.0000
Nitrogen......................	12.723	0.078596	0.9736
Carbonic oxide................	12.804	0.0781	0.9674
Olefiant gas..................	12.580	0.0795	0.9847
Gaseous steam.................	19.913	0.05022	0.6220
Ammoniacal gas................	21.017	0.04758	0.5894
Light carburetted hydrogen...	22.412	0.04462	0.5527
Coal gas......................	28.279	0.03536	0.4381
Hydrogen......................	178.83	0.005592	0.0692

Weight of Men and Animals.

The average weight of 20,000 men and women, weighed at Boston, Mass., in 1864, was—men, 141½ lbs.; women, 124½ lbs.

A crowd of people closely packed = 85 lbs. per sup. ft.

The average weight of a man = 140 lbs. 6 oz., or about fifteen men to a ton.

A strong cart horse = 14 cwt., and a cavalry horse = 11 cwt.

An ox = 7 to 8 cwt. Cow, 6½ to 8 cwt.

A pig = 1 to 1½ cwt., and a sheep = ¾ to 1¼ cwt.

Specific Gravities and Weights of Stones, Earths, Etc.

Stones, Earths, etc.	Specific gravity.	Weight of a cubic ft. in lbs. avoir	Stones, Earths, etc.	Specific gravity.	Weight of a cubic ft. in lbs. avoir
Amber	1.078	67	Glass, white flint	3.	188
Asbestos	2.996	187	Glass, plate	2.94	184
Asphalte, gritted	2.5	156	Glass, crown	2.53	158
Basalt	2.864	180	Granite	2.625	164
Bathstone	1.97	123	Gypsum	2.28	140
			Jargon, Ceylon	4.416	276
Bermuda stone, hard	2.62	164	Kentish rag	2.66	166
Bermuda stone, soft	1.47	92	Lime, chalk, ground	.83	52
Beryl, Oriental	3.549	221	Limestone, lias	2.5	156
Bitumen	1	62	" magnesian	2.3	144
			Marble (average)	2.7	170
Brick, common stock	1.8	115	Marl	1.9	120
Brick, red facing	2	130	Masonry, rubble	2.2	140
Brick, fire	2.4	150	" ashlar, Port'd	2.2	140
			" " granite	2.5	160
Brickwork in cement	1.8	110	Millstone	2.5	155
Caen stone	2	125	Mortar, old	1.4	90
Cement, Portland	1.2	87	Mortar, new	1.7	110
Cement, Roman	.9	60	Mud	1.63	102
Chalk, solid	1.8	112	Opal	2.114	132
	2.8	175	Peat, hard	1.3	83
Chalk in lumps	—	87	Pitch	1.1	79
Clay, potters'	1.9	120	Plaster of Paris	1.2	80
Clay with gravel	2	130	Porcelain, Chinese	2.385	147
Clay, ordinary	1.9	120	Porphyry, green	2.9	180
Coal, anthracite	1.602	100	Pumice stone	.91	57
Coal, bituminous	1.24	77	Purbeck stone	2.6	162
	1.44	90	Puzzolana	2.7	170
Coke	.7	47	Quartz	2.64	166
Concrete	1.9	120	Rotten stone	2.	124
Concrete, lime	1.8	118	Sand, river	1.9	118
Coral	2.68	167	Sandstone	2.3	145
Crystal, rock	2.653	165	Shale	2.6	162
Diamond	3.536	221	Shingle	—	95
Earth, vegetable	1.4	90	Slate	2.9	181
Earth, loamy	1.6	100	Slates, Cornish	2.5	160
Earth, semi-fluid	1.7	110	Spar	2.594	162
Emerald, Peru	2.775	173	Sulphur, melted	2.	124
Emery	4.	250	Tiles, average	1.8	115
Feldspar	2.6	162	Topaz	3.8	237
Flint	2.594	162	Trap	2.7	172
Freestone, hewn	2.2	140	White lead	3.16	197

WEIGHT OF METALS.—Weight in lbs. of a Square Foot of Different Metals, in Thicknesses Varying by 1-16 of an Inch.

Thickness in inches.	Wrought Iron.	Cast Iron.	Steel.	Copper.	Zinc.	Brass.	Gun Metal.	Tin.	Lead.
1-16	2.3	2.3	2.5	2.9	2.3	2.6	2.7	2.4	3.7
1-8	5.0	4.7	5.1	5.8	4.7	5.3	5.5	4.8	7.4
3-16	7.5	7.0	7.6	8.7	7.0	8.2	8.2	7.2	11.2
¼	10.0	9.4	10.2	11.6	9.4	11.0	10.9	9.6	14.9
5-16	12.5	11.7	12.8	14.5	11.7	13.7	13.7	12.0	18.6
⅜	15.0	14.1	15.3	17.2	14.0	16.4	16.4	14 4	22.3
7-16	17.5	16.4	17.9	20.0	16.4	19.2	19.1	16.8	26.0
½	20.0	18.7	20.4	22.9	18.7	21.9	21.9	19.3	29.7
9-16	22.5	21.1	23.0	25.7	21.1	24.6	24.6	21.7	33.4
⅝	25.0	23.5	25.5	28.6	23.4	27.4	27.3	24.1	37.1
11-16	27.5	25.8	28.1	31.4	25.7	30.1	30.0	26.5	40.9
¾	30.0	28.1	30.6	34.3	28 1	32.9	32.8	28.9	44.6
13-16	32.5	30.5	33.2	37.2	30.4	35.6	35.0	31.3	48.3
⅞	35.0	32.8	35.7	40.0	32.8	38.3	38.2	33.7	52.0
15-16	37.5	35.2	38.3	42.9	35.1	41.2	41.0	36.1	55.7
1	40.0	37.5	40.8	45 8	37.5	43.9	43.7	38.5	59.4

NOTE.—The weight per square foot to any gauge can easily be obtained from the above table by multiplying the weight of a square foot of the metal one inch thick by the thickness of the gauge in inches or parts of an inch.

Average Number of Cubic Feet Per Ton of Various Substances for Estimating Work or Stowage.

Iron	4.7
Lead	3.2
Brick	22
Clay	22
Sand	24
Earth, loose	28
Granite	16
Oak	39 5
Ash	45
Cedar	72
Mahogany, sp	45
Deal	50
Pine, red	55
" yellow	77
Water, fresh	36
" salt	35
Coke	90
Coal (stowed)	48
Wood (equivalent) requires	288

Specific Gravities and Weights of Different Metals.

Metals.	Specific gravity.	Weight of a cubic feet in lbs. avoir....	Metals.	Specific gravity.	Weight of a cubic feet in lbs. avoir....
Aluminium....	2.6	162	Meteoric iron..	7.965	497
Antimony, cast	6.712	419	Lead, cast.....	11,352	709
Arsenic	5.763	360	Lead, milled..	11.4	712
Bismuth, cast.	9.822	614	Mercury, com-		
Brass, cast	7.8	487	mon, at 32°..	13.568	848
	8.4	524	Mercury pure.	14	875
Brass wire....	8.544	534	Mercury, solid.	15.6	977
Bronze	8.218	513	Nickel	8 279	517
Cobalt, cast...	7.812	488	Palladium.....	11.8	737
Copper, cast...	8.788	549	Pewter	7.471	466
Copper coin...	8.915	557	Platinum.. ..	21	1,311
Copper wire				22	1,373
and sheet...	8.878	555	Rhodium	11	687
Gold, coin	17.647	1,102	Silver coin....	10.534	658
Gold trinket..	15.609	981	Silver pure, cast	10.744	671
Pure gold, cast	19.258	1,203	Steel....	7.8	487
Pure gold,				7.9	493
hammered...	19.316	1,210	Tin, cast.....	7.3	456
Gun metal....	8.784	549		7.5	468
Iridium	23.	1,437	Type Metal....	10.4	653
Iron, wrought	7	474	Zinc..........	6.8	424
	7.8	486		7.19	449
Iron, wrought average	7.698	480			

Weight of a Cubic Inch of Different Metals.

1 cubic inch zinc weighs .252 lbs. = 1 cubic inch wrought iron × .92.

1 cubic inch cast iron weighs .26 lbs. = 1 cubic inch wrought iron × .93.

1 cubic inch tin weighs .262 lbs. = 1 cubic inch wrought iron × .94.

1 cubic inch wrought iron weighs .28 lbs. = 1 cubic inch wrought iron × 1.

1 cubic inch steel weighs .288 lbs. = 1 cubic inch wrought iron × 1.02.

1 cubic inch brass weighs .3 lbs. = 1 cubic inch wrought iron × 1.09.

1 cubic inch copper weighs .32 lbs. = 1 cubic inch wrought iron × 1.15.

1 cubic inch lead weighs .41 lbs. = 1 cubic inch wrought iron × 1.47.

Specific Gravities and Weights of Woods.

Woods (Seasoned).*	Specific gravity.	Weight of a cubic foot in lbs. avoir
Acacia	.8	50
Alder	.51	32
Apple tree	.793	49
Ash	.7	43
	.84	53
Bamboo	.4	25
Bay Tree	.8	50
Beech	.69	43
	.85	33
Birch	.711	44
Blue gum	.843	52
Box	.96	60
Brazil wood, red.	1.031	64
Bullet tree	1.046	65
Cabacalli	.9	56
Cane	.4	25
Cedar of Lebanon	.56	35
" American.	.48	30
Charcoal, birch	.54	34
" fir	.45	28
" oak	.33	21
" pine	.29	18
Cherry	.715	44
Chestnut	.64	40
Cork	.24	15
Cowrie	.579	36
Cypress	.598	37
Ebony, Indian	1.1	70
" American	1.28	60
Elder	.67	42
Elm	.55	34
	.72	50
Fir, Dantzic	.58	36
" Riga	.54	33
Hawthorn	.91	57
Hazel	.64	40
Holly	.76	47
Hornbeam	.77	48
Kauri, or Cowdie.	.53	33
Laburnum	.92	57
Larch	.5	31
	.56	35
Lignum vitæ	.65	41
	1.33	83
Locust	.71	44
Logwood	.9	55
Mahogany, Honduras	.64	40
Mahogany, Spanish or Cuba	.77	48
Maple	.755	47
Mora	.92	57
Oak, English and French	.73	45
	.9	56
Oak, American	.72	47
	.86	53
" Baltic	.74	46
" Italian	.96	60
	1.04	65
Orange	.705	44
Pear	.661	41
Pine, pitch	.66	41
" red	.64	40
" yellow	.52	33
Plum	.87	54
Poon	.579	36
Poplar, white	.51	32
" Italian	.42	26
Saul	.96	60
Spruce	.48	30
Sycamore	.6	37
Teak, Indian	.78	48
" African	.96	60
Tonka	.99	62
Wainscot, Riga	.6	38
Walnut, Am.	.56	35
Walnut, Spanish.	.67	43
Watergum	1.	62
Willow	.48	30
Yew	.807	50

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* The specific gravities of woods differ considerably, according as they are dry or green, and from hills or plains. Those given are for woods which have been drying in the air for ten or twelve months, and which have lost one-third or one-fourth of their weight The quantity of water in green wood is about 42 per cent.

Gold and Silver Produced in the United States.

The following estimate of the gold and silver produced in the United States, since the discovery of gold in California, is compiled from the official reports of the Director of the United States Mint:

Year.	Gold.	Silver.	Total.
1849.........	$40,000,000	$50,000	$40,050,000
1850.........	50,000,000	50,000	50,050,000
1851.........	55,000,000	50,000	55,050,000
1852.........	60,000,000	50,000	60,050,000
1853.........	65,000,000	50,000	65,050,000
1854........	60,000,000	50,000	60,050,000
1855........	55,000,000	50,000	55,050,000
1856........	55,000,000	50,000	55,050,000
1857.........	55,000,000	50,000	55,050,000
1858.	50,000,000	500,000	50,500,000
1859.........	50,000,000	100,000	50,100,000
1860.........	46,000,000	150,000	46,150,000
1861.........	43,000,000	2,000,000	45,000,000
1862.........	39,200,000	4,500,000	43,700,000
1863.........	40,000,000	8,500,000	48,500,000
1864.........	46,100,000	11,000,000	57,100,000
1865.........	53,225,000	11,250,000	64,475,000
1866.........	53,500,000	10,000,000	63,500,000
1867.........	51,725,000	13,500,000	65,225,000
1868.........	48,000,000	12,000,000	60,000,000
1869.........	49,500,000	12,000,000	61,500,000
1870.........	50,000,000	16,000,000	66,000,000
1871.........	43,500,000	23,000,000	66,500,000
1872.........	36,000,000	28,750,000	64,750,000
1873.........	36,000,000	35,750,000	71,750,000
1874.........	33,490,902	37,324,594	70,815,496
1875.........	33,467,856	31,727,560	65,195,416
1876.........	39,429,166	38,783,016	78,712,182
1877.........	46,897,390	39,793,573	86,690,963

GOLD AND SILVER PRODUCED—(Continued)

YEAR.	GOLD.	SILVER.	TOTAL.
1878..........	51,206,360	45,281,385	96,487,745
1879..........	38,899,858	40,812,132	79,711,990
1880..........	36,000,000	38,450,000	74,450,000
1881..........	34,700,000	43,000,000	77,700,000
1882..........	32,500,000	46,800,000	79,300,000
1883..........	30,000,000	46,200,000	76,200,000
1884..........	30,800,000	48,800,000	79,600,000
1885..........	31,800,000	51,600,000	83,400,000
1886..........	35,000,000	51,000,000	86,000,000
1887..........	33,000,000	53,357,000	86,357,000
1888..........	33,167,500	59,206,700	92,374,200
1889..........	32,967,000	64,768,730	97,735,730
T't'l to 1890	1,737,676,032	823,304,720	....
Grand total	....	....	2,560,980,752

Force Exerted by Dynamite.

Nitro-glycerine and dynamite do not, when exploded, exert as much force as is popularly believed. To speak precisely, the power developed by the explosion of a ton of dynamite is equal to 45,675 foot-tons. One ton of nitro-glycerine similarly exploded will exert a power of 54,452 foot-tons; and one ton of blasting gelatine, similarly exploded, 71,050 foot-tons. These figures, although large, are not enormous, and need not excite terror. Seventy-one thousand tons of ordinary building stone, if arranged in the form of a cube, would measure only ninety feet on the side, and if it were possible to concentrate the whole force of a ton of blasting gelatine at the moment of explosion on such a mass, the only effect would be to lift it to a height of a foot. The foregoing figures are derived from experiments made at Ardeer with an instrument that gives accurate results in measuring the force of explosives.

HOW TO TELL ANY PERSON'S AGE.

There is a good deal of amusement in the following magical table of figures. It will enable you to tell how old the young ladies are. Just hand this table to a young lady, and request her to tell you in which column or columns her age is contained, and add together the figures at the top of the columns in which her age is found, and you have the great secret. Thus, suppose her age to be 17, you will find that number in the first and fifth columns; add the first figures of these two columns. Here is the magic table:

1	2	4	8	16	32
3	3	5	9	17	33
5	6	6	10	18	34
7	7	7	11	19	35
9	10	12	12	20	36
11	11	13	13	21	37
13	14	14	14	22	38
15	15	15	15	23	39
17	18	20	24	24	40
19	19	21	25	25	41
21	22	22	26	26	42
23	23	23	27	27	43
25	26	28	28	28	44
27	27	29	29	29	45
29	30	30	30	30	46
31	31	31	31	31	47
33	34	36	40	48	48
35	35	37	41	49	49
37	38	38	42	50	50
39	39	39	43	51	51
41	42	44	44	52	52
43	43	45	45	53	53
45	46	46	46	54	54
47	47	47	47	55	55
49	50	52	56	56	56
51	51	53	57	57	57
53	54	54	58	58	58
55	55	55	59	59	59
57	58	60	60	60	60
59	59	61	61	61	61
61	62	62	62	62	62
63	63	63	63	63	63

Ashphalt, or Asphaltum.—A bituminous substance, found in the tertiary strata in different parts of the earth, evidently produced from coal by the action of heat. It is much used as a pavement when mixed with certain proportions of lime, gravel or pounded stone. Coal-tar is artificial asphalt.

LUMBER AND LOG MEASUREMENT AT SIGHT.

Showing net proceeds (fractions of feet omitted) of logs in 1 inch boards, deducting saw kerf and slabs. If the required dimension is not in the table, unite two or three suitable numbers together. The length will be found in the left hand column and the diameter in inches on the head of the other columns.

Len., feet	Diam. 10	Diam. 11	Diam. 12	Diam. 13	Diam. 14	Diam. 15	Diam. 16	Diam. 17	Diam. 18	Diam. 19	Diam. 20	Diam. 21	Diam. 22	Diam. 23	Diam. 24	Diam. 25	Diam. 26	Diam. 27	Diam. 28	Diam. 29	Diam. 30	Diam. 31	Diam. 32	Diam. 33	Diam. 34	Diam. 35	Diam. 36
10	23	31	40	50	62	75	90	105	122	140	160	180	202	225	250	275	302	330	360	391	422	456	490	526	562	601	640
11	25	34	44	55	69	83	99	116	135	154	176	198	223	248	275	302	333	363	396	430	465	502	539	578	619	661	704
12	27	37	48	61	75	91	108	126	147	169	192	217	243	271	300	331	363	397	432	469	507	547	588	631	675	721	768
13	29	40	52	66	81	98	117	137	159	183	208	235	263	293	325	358	393	430	468	508	549	592	627	684	731	781	832
14	32	43	55	71	88	106	126	148	171	197	224	253	283	313	350	386	433	463	504	547	561	638	686	736	781	841	896
15	34	46	60	76	94	113	135	158	184	211	240	271	303	336	375	413	453	496	540	586	633	683	735	789	844	901	960
16	36	49	64	81	100	121	144	169	196	225	256	289	324	359	400	441	484	530	576	625	676	729	784	842	900	961	1024
17	38	52	68	86	106	128	153	179	208	239	272	307	344	383	425	468	514	563	612	664	718	774	833	895	956	1021	1088
18	41	55	72	91	112	136	162	190	220	253	288	325	364	406	450	496	544	596	648	703	761	820	882	946	1012	1081	1152
19	43	58	76	96	119	143	170	201	232	267	304	343	384	429	475	523	574	630	684	742	803	865	931	999	1069	1141	1216
20	46	61	80	101	125	151	180	211	244	280	320	361	404	452	500	550	605	661	720	782	845	912	980	1052	1125	1202	1280
21	48	64	84	106	131	158	189	222	257	293	336	379	425	473	525	579	635	693	756	820	887	957	1029	1103	1181	1261	1344
22	50	67	88	111	137	166	198	232	269	309	352	397	445	496	550	605	665	726	792	860	930	1004	1078	1156	1238	1322	1408
23	52	70	92	116	144	174	207	243	281	323	368	415	465	519	575	632	695	760	828	898	972	1049	1127	1209	1295	1381	1472
24	54	74	96	122	150	181	216	254	294	338	384	433	486	541	600	662	726	794	864	938	1014	1094	1176	1262	1350	1442	1536
25	56	77	100	127	156	189	225	264	308	351	400	451	506	562	625	689	756	827	900	977	1056	1139	1225	1315	1406	1501	1600
26	59	80	104	132	163	196	234	274	318	366	416	470	526	586	650	716	786	860	936	1016	1098	1184	1274	1368	1462	1562	1664
27	61	83	108	137	169	204	243	285	330	380	432	488	546	606	675	744	826	893	972	1055	1140	1230	1323	1420	1518	1622	1728
28	63	86	112	142	175	212	252	296	342	394	448	506	566	626	700	772	866	926	1008	1094	1182	1276	1372	1472	1574	1682	1792
29	65	89	116	147	182	219	261	306	355	408	464	524	586	649	725	799	886	959	1044	1133	1224	1321	1421	1525	1631	1742	1856
30	68	92	120	152	188	226	270	316	368	422	480	542	606	672	750	826	906	992	1080	1172	1266	1366	1470	1578	1688	1802	1920
31	70	95	124	157	193	234	279	327	380	436	496	560	627	695	775	854	937	1026	1116	1211	1309	1412	1519	1631	1744	1862	1984
32	72	98	128	162	200	242	288	338	392	450	512	578	648	718	800	882	968	1060	1152	1250	1352	1458	1568	1684	1800	1922	2048
33	74	101	132	169	206	249	297	348	404	464	528	596	668	742	825	909	998	1093	1188	1289	1394	1503	1617	1737	1856	1982	2112
34	77	104	136	172	212	256	306	358	416	478	544	614	688	766	850	936	1028	1126	1224	1328	1436	1548	1666	1790	1912	2042	2176
35	79	107	140	177	219	265	315	369	428	492	560	632	708	789	875	964	1058	1159	1260	1367	1479	1594	1715	1841	1968	2102	2240
36	81	110	144	182	224	272	324	380	440	506	576	650	728	812	900	992	1088	1192	1266	1406	1522	1640	1764	1892	2024	2162	2304

LUMBER MEASUREMENT TABLE.

Square timber and scantling brought down to one inch board measure. Example—To find the number of feet in a beam 6x10 and 24 feet in length, consult the table, and opposite 24 and under 6x10 you will find 120, the correct number of feet. Fractions of feet omitted.

Ft.	2x4	2x5	2x6	2x7	2x8	3x3	3x4	3x5	3x6	3x7	3x8	4x4	4x5	4x6	4x7	4x8	4x9	5x5	5x6	5x7	5x8	6x6	6x7	6x8	6x9	6x10
6.. ..	4	5	6	7	8	5	6	7	9	10	12	8	10	12	14	16	18	12	15	17	20	18	21	24	27	30
7..........	4	5	7	8	9	5	7	8	10	12	14	9	11	14	16	18	21	14	17	20	23	21	24	28	31	35
8..........	5	6	8	9	10	6	8	10	12	14	16	10	13	16	18	21	24	16	20	23	26	24	28	32	36	40
9..........	6	7	9	10	12	6	9	11	13	15	18	12	15	18	21	24	27	18	22	26	30	27	31	36	40	45
10..........	6	8	10	11	13	7	10	12	15	17	20	13	16	20	23	26	30	20	25	29	33	30	35	40	45	50
11..........	7	9	11	12	14	8	11	13	16	19	22	14	18	22	25	29	33	22	27	32	36	33	38	44	49	55
12..........	8	10	12	14	16	9	12	15	18	21	24	16	20	24	28	32	36	25	30	36	40	36	42	48	54	60
13..........	8	10	13	15	17	9	13	16	19	22	26	17	21	26	30	34	39	27	32	37	43	39	45	52	58	65
14..........	9	11	14	16	18	10	14	17	21	24	28	18	23	28	32	37	42	29	35	40	46	42	49	56	63	70
15..........	10	12	15	17	20	11	15	18	22	26	30	20	25	30	35	40	45	31	37	43	50	45	52	60	67	75
16..........	10	13	16	18	21	12	16	20	24	28	32	21	26	32	37	42	48	33	40	46	53	48	56	64	72	80
17..........	11	14	17	19	22	12	17	21	25	29	34	22	28	34	39	45	51	35	42	49	56	51	59	68	76	85
18..........	12	15	18	21	24	13	18	22	27	31	36	24	30	36	42	48	54	37	45	52	60	54	63	72	81	90
19..........	12	15	19	22	25	14	19	23	28	33	38	24	31	38	44	50	57	39	47	55	63	57	66	76	85	95
20..........	13	16	20	23	26	15	20	25	30	35	40	26	33	40	46	53	60	41	50	58	66	60	70	80	90	100
21	14	17	21	24	28	15	21	26	31	36	42	28	35	42	49	56	63	43	52	61	70	63	73	84	94	105
22..........	14	18	22	25	29	16	22	27	33	38	44	29	36	44	51	58	66	45	55	64	73	66	77	88	99	110
23..........	15	19	23	26	30	17	23	28	34	40	46	30	38	46	53	61	69	47	57	67	76	69	80	92	103	115
24..........	16	20	24	28	32	18	24	30	36	42	48	32	40	48	56	64	72	50	60	70	80	72	84	96	108	120
25..........	16	20	25	29	33	18	25	31	37	43	50	33	41	50	58	66	75	52	62	72	83	75	87	100	112	125
30..........	20	25	30	35	40	22	30	37	45	52	60	40	50	60	70	80	90	62	75	87	100	90	105	120	135	150
34..........	22	28	34	39	45	25	34	42	51	59	68	45	58	68	79	90	102	70	85	99	113	102	119	136	153	170
40..........	26	33	40	46	53	30	40	50	60	70	80	53	66	80	93	106	120	83	100	116	132	120	140	160	180	200
42..........	28	35	42	49	56	31	42	52	63	73	84	56	70	84	98	112	126	87	105	122	140	126	147	168	189	210
44..........	29	36	44	51	58	33	44	55	66	77	88	58	73	88	102	117	132	90	110	128	146	132	154	176	198	220

BOARD AND PLANK MEASUREMENT AT SIGHT.

This table gives the sq. ft. and in. in board from 6 to 25 in. wide, and from 8 to 36 ft. long. If a board be longer than 30 ft. unite two numbers. Thus, if a board is 40 ft. long and 16 in. wide, add 30 and 10 and you have 53 ft. 4 in. For a two inch plank double the product.

Feet Long.	6 in W.	7 in W.	8 in W.	9 in W.	10 in W.	11 in W.	12in W.	13 in W.	14 in W.	15 in W.	16 in W.	17 in W.	18 in W.	19 in W.	20 in W.	21 in W	22 in W	23 in W.
	ft in	ft in.	ft in	ft in	ft in.	ft in.	ft in	ft in.	ft in	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.
8......	4 0	4 8	5 4	6 0	6 8	7 4	8 0	8 8	9 4	10 0	10 8	11 4	12 8	12 8	13 4	14 0	14 8	15 4
9......	4 6	5 3	6 0	6 9	7 6	8 3	9 0	9 9	10 6	11 3	12 0	12 9	13 6	14 3	15 0	15 9	16 6	17 3
10......	5 0	5 10	6 8	7 6	8 4	9 2	10 0	10 10	11 8	12 6	13 4	14 2	15 0	13 10	16 8	17 6	18 4	19 2
11......	5 6	6 5	7 4	8 3	9 2	10 1	11 0	11 11	12 10	12 9	14 8	15 7	16 6	17 5	18 4	19 3	20 2	21 1
12......	6 0	7 0	8 0	9 0	10 0	11 0	12 0	13 0	14 0	15 0	16 0	17 0	18 0	19 0	20 0	21 0	22 0	23 0
13......	6 6	7 7	8 8	9 9	10 10	11 11	13 0	14 1	15 2	16 3	17 4	18 5	19 6	20 7	21 8	22 9	23 10	24 11
14......	7 0	8 2	9 4	10 6	11 8	12 10	14 0	15 2	16 4	17 6	18 8	19 10	21 0	22 2	23 4	24 6	25 8	26 10
15......	7 6	8 9	10 0	11 3	12 6	13 9	15 0	16 3	17 6	18 9	20 0	21 3	22 6	23 9	25 0	26 3	27 6	28 9
16......	8 0	9 4	10 8	12 0	13 4	14 8	16 0	17 4	18 8	20 0	21 4	22 8	24 0	25 4	26 8	28 0	29 4	30 8
17......	8 6	9 11	11 4	12 9	14 2	15 7	17 0	18 5	19 10	21 3	22 8	24 1	25 6	26 11	2 4	29 9	31 2	32 7
18......	9 0	10 6	12 0	13 6	15 0	16 6	18 0	19 6	21 0	22 6	24 0	25 6	27 0	28 6	30 0	31 6	33 0	34 6
19......	9 6	11 1	12 8	14 3	15 10	17 5	19 0	20 7	22 2	23 9	25 4	26 11	28 6	30 1	31 8	33 3	34 10	36 5
20......	10 0	11 8	13 4	15 0	16 8	18 4	20 0	21 8	23 4	25 0	26 8	28 4	30 0	31 8	33 4	35 0	36 8	38 4
21......	10 6	12 3	14 0	15 9	17 6	19 3	21 0	22 9	24 6	26 3	28 0	29 9	31 6	33 3	35 0	36 9	38 6	40 3
22......	11 0	12 10	14 8	16 6	18 4	20 2	22 0	23 10	25 8	27 6	29 4	31 2	33 0	34 10	36 8	38 6	40 4	42 2
23......	11 6	13 5	15 4	17 3	19 2	21 1	23 0	24 11	26 10	28 9	30 8	32 7	34 6	36 5	38 4	40 3	42 2	34 1
24......	12 0	14 0	16 0	18 0	20 0	22 0	24 0	26 0	28 0	30 0	33 0	34 0	36 0	38 0	40 0	42 0	44 0	46 4
25......	12 6	14 7	16 8	18 9	20 10	22 11	25 0	27 1	29 2	31 3	34 4	35 5	37 6	39 7	41 8	43 9	45 10	47 11
26......	13 0	15 2	17 4	19 6	21 8	23 10	26 0	28 2	30 4	32 6	35 8	36 10	39 0	41 2	43 4	45 6	47 8	49 10
27......	13 6	15 9	18 0	20 3	22 6	24 9	27 0	29 3	31 6	33 9	36 0	38 3	40 6	42 9	45 0	47 3	49 6	51 9
28......	14 0	16 4	18 8	21 0	23 4	25 8	28 0	30 4	32 8	35 0	37 4	39 8	42 0	44 4	46 8	49 0	51 4	53 8
29......	14 6	16 11	19 4	21 9	24 2	26 7	29 0	31 5	33 10	36 3	38 8	41 1	43 6	45 11	48 4	50 9	53 2	55 7
30......	15 0	17 6	20 0	22 6	25 6	27 6	30 0	32 6	35 0	37 6	40 0	42 6	45 0	47 6	50 0	51 6	55 0	57 6

LUMBER MEASUREMENT AT SIGHT.

One inch board measure. For plank, double or treble the product, as may be required. If a board or plank is longer or wider than the dimensions here given, add two suitable numbers together. The left-hand column contains the length in feet: the width in inches heads each column.

Feet long.	6 in		7 in		8 in		9 in		10 in		11 in		12 in		13 in		14 in		15 in		16 in		17 in		18 in		19 in		20 in		21 in		42 in		23 in		24 in		25 in	
	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in
8.......	4	0	4	8	5	4	6	0	6	8	7	4	8	0	8	8	9	4	10	0	10	8	11	4	12	0	12	8	13	4	14	0	14	8	15	4	16	0	16	8
9.......	4	6	5	3	6	0	6	9	7	6	8	3	9	0	9	9	10	6	11	0	12	0	12	9	13	6	14	3	15	0	15	9	16	6	17	3	18	0	18	9
10.......	5	0	5	10	6	8	7	6	8	4	9	2	10	0	10	10	11	8	12	6	13	4	14	2	15	0	15	10	16	8	17	6	18	4	19	2	20	0	20	10
11.......	5	6	6	5	7	4	8	3	9	2	10	1	11	0	11	11	12	10	13	9	14	8	15	7	16	6	17	5	18	4	19	3	20	2	21	1	22	0	22	11
12.......	6	0	7	0	8	0	9	0	10	0	11	0	12	0	13	0	14	0	15	0	16	0	17	0	18	0	19	0	20	0	21	0	22	0	23	0	24	0	25	0
13.......	6	6	7	7	8	8	9	9	10	10	11	11	13	0	14	1	15	2	16	3	17	4	18	5	19	6	20	7	21	8	22	9	23	10	24	11	26	0	27	1
14.......	7	0	8	2	9	4	10	6	11	8	12	10	14	0	15	2	16	4	17	6	18	8	19	10	21	0	22	2	23	4	24	6	25	8	26	10	28	0	29	2
15.......	7	6	8	9	10	0	11	3	12	6	13	9	15	0	16	3	17	6	18	9	20	0	21	3	22	6	23	9	25	0	26	3	27	6	28	9	30	0	31	3
16.......	8	0	9	4	10	8	12	0	13	4	14	8	16	0	17	4	18	8	20	0	21	4	22	8	24	0	25	4	26	8	28	0	29	4	30	8	32	0	33	4
17.......	8	6	9	11	11	4	12	9	14	2	15	7	17	0	18	5	19	10	21	3	22	8	24	1	25	6	26	11	28	4	29	9	31	2	32	7	34	0	35	5
18.......	9	0	10	6	12	0	13	6	15	0	16	6	18	0	19	6	21	0	22	6	24	0	25	6	27	0	28	6	30	0	31	6	33	0	34	6	36	0	37	6
19.......	9	6	11	1	12	8	14	3	15	10	17	5	19	0	20	7	22	2	23	9	25	4	23	11	28	6	30	1	31	8	33	3	34	10	36	5	38	0	39	7
20.......	10	0	11	8	13	4	15	0	16	8	18	4	20	0	21	8	23	4	25	0	26	8	28	4	30	0	31	8	33	4	35	0	36	8	38	4	40	0	41	8
21.......	10	6	12	3	14	0	15	9	17	6	19	3	21	0	22	9	24	6	26	3	28	0	29	9	31	6	33	3	35	0	36	9	38	6	40	3	42	0	43	9
22.......	11	0	12	10	14	8	16	6	18	4	20	5	22	0	23	10	25	8	27	6	29	4	31	2	33	0	34	10	36	8	38	6	40	4	42	2	44	0	45	10
23.......	11	6	13	5	15	4	17	3	19	2	21	1	23	0	24	11	26	10	28	9	30	8	32	7	34	6	36	5	38	4	40	3	42	2	44	1	46	0	47	11
24.......	12	0	14	0	16	0	18	0	20	0	22	0	24	0	26	0	28	0	30	0	32	0	34	0	36	0	38	0	40	0	42	0	44	0	46	0	48	0	50	0
25.......	12	6	14	7	16	8	18	9	20	10	22	11	25	0	27	1	29	2	31	3	33	4	35	5	37	6	39	7	41	8	43	9	45	10	47	11	50	0	52	1
26.......	13	0	15	2	17	4	19	6	21	8	23	10	26	0	28	2	30	4	32	6	34	8	36	10	39	0	41	2	43	4	45	6	47	8	49	10	52	0	54	2
27.......	13	6	15	9	18	0	20	3	22	6	24	9	27	0	29	3	31	6	33	9	36	0	38	3	40	6	42	9	45	0	47	3	49	6	51	9	54	0	56	3
28.......	14	0	16	4	18	8	21	0	23	4	25	8	28	0	30	4	32	8	35	0	37	4	39	8	42	0	44	4	46	8	49	0	51	4	53	8	56	0	58	4
29.......	14	6	16	11	19	4	21	9	24	2	26	7	29	0	31	5	33	10	36	3	38	8	41	1	43	6	45	11	48	4	50	9	53	2	55	7	58	0	60	5
30.......	15	0	17	6	20	0	22	6	25	0	27	6	30	0	32	6	35	0	37	6	40	0	42	6	45	0	47	6	50	0	51	6	55	0	57	6	60	0	62	6
31.......	15	6	18	1	20	8	23	3	25	10	28	5	31	0	33	7	36	2	38	9	41	6	44	0	46	6	49	0	51	6	54	0	57	0	59	6	62	0	64	6
32.......	16	0	18	8	21	4	24	0	26	8	29	4	32	0	34	8	37	4	40	0	42	6	45	6	48	0	50	6	53	6	56	0	58	6	61	6	64	0	66	6
33.......	16	6	19	3	22	0	24	9	27	6	30	3	33	0	35	9	38	6	41	3	44	0	46	6	49	6	52	0	55	0	57	6	60	6	63	0	66	0	68	4
34.......	17	0	19	10	22	8	25	6	28	4	31	2	34	0	36	10	39	8	42	6	45	6	48	0	51	0	54	0	56	6	59	6	62	6	65	0	68	0	70	6
35.......	17	6	20	5	23	4	26	3	29	2	32	1	35	0	37	11	40	10	43	9	46	6	49	6	52	0	55	6	58	6	61	0	64	0	67	0	70	0	73	0
36.......	18	0	21	0	24	0	27	0	30	0	33	0	36	0	39	0	42	0	45	0	48	0	51	0	54	0	57	0	60	0	63	0	66	0	69	0	72	0	75	0

Logs Reduced to Running Board Measure. Logs Reduced to 1 Inch Board Measure.

If the log is longer than contained in the table, take any two lengths. Fractional parts of inches are not given. The diameter of timber is usually taken 20 ft. from the butt. All logs short of 20 ft., take the diameter at the top or small end. To find the number of feet of boards which a log will produce when sawed, take the length of feet in the first column on the left hand, and the diameter at the top of the column in inches. Suppose a log 12 ft. long and 24 in. in diameter. In the left hand column is the length, and opposite 12 under 24 is 300, the number of feet of boards in a log of that size.

Feet long.	Diam. 12	Diam. 13	Diam. 14	Diam. 15	Diam. 16	Diam. 17	Diam. 18	Diam. 19	Diam. 20	Diam. 21	Diam. 22	Diam. 23	Diam. 24	Diam. 25	Diam. 26	Diam. 27	Diam. 28	Diam. 29	Diam. 30	Diam. 31	Diam. 32	Diam. 33	Diam. 34
10	54	66	76	93	104	107	137	154	179	194	210	237	256	283	309	339	359	377	407	440	456	486	496
11	59	72	83	102	114	131	151	169	196	213	231	261	270	311	340	374	396	415	447	484	502	535	546
12	64	78	90	111	124	143	164	184	213	232	252	285	300	340	371	408	432	453	489	528	548	584	596
13	69	84	97	120	134	154	177	199	231	251	273	308	327	369	404	442	469	491	530	572	594	633	646
14	74	90	104	129	144	166	191	214	249	270	293	332	350	397	435	476	505	529	571	618	640	682	696
15	79	96	111	138	154	177	204	229	266	289	314	355	376	426	465	511	541	567	612	662	686	731	746
16	84	102	118	146	164	189	217	244	284	308	335	379	401	455	496	545	578	605	653	706	732	780	796
17	89	108	126	155	173	200	231	259	301	327	356	402	426	483	527	579	614	643	694	751	778	829	846
18	94	114	133	164	183	212	244	274	319	346	377	426	451	512	558	613	650	681	735	795	824	878	896
19	99	121	140	173	193	223	257	289	336	365	398	449	477	541	590	647	688	719	776	839	870	927	946
20	104	127	147	182	203	236	271	304	354	384	419	473	501	569	621	681	724	757	817	884	916	976	996
21	109	133	154	191	213	247	284	319	371	403	440	497	527	598	652	716	760	796	859	928	962	1025	1046
22	114	139	161	200	223	259	297	334	389	422	461	520	552	627	684	750	796	834	900	972	1008	1074	1096
23	119	145	168	209	233	270	311	349	407	441	481	542	568	655	715	784	833	872	941	1017	1054	1123	1146
24	124	151	176	218	243	282	325	364	424	460	502	568	613	684	746	818	889	910	982	1061	1100	1172	1196
25	129	157	183	227	253	293	337	379	442	479	523	591	628	713	777	853	906	948	1023	1105	1146	1221	2246
26	134	163	190	236	262	305	350	394	459	498	544	615	653	742	808	887	942	986	1064	1149	1192	1270	1296
27	139	169	197	245	273	316	363	409	477	517	565	630	678	771	839	921	970	1024	1105	1193	1238	1319	1346
28	144	175	204	254	283	328	376	424	494	536	586	663	703	800	870	955	1015	1062	1146	1237	1284	1368	1396
29	149	181	211	263	293	339	389	439	512	555	607	687	728	829	901	989	1052	1100	1187	1281	1330	1417	1446
30	154	187	218	272	303	351	402	454	529	574	628	711	753	858	932	1023	1088	1138	1228	1325	1376	1466	1496
31	159	193	225	281	313	362	415	169	547	593	649	735	778	887	963	1057	1125	1176	1269	1369	1422	1515	1546

WOOD AND BARK MEASUREMENT AT SIGHT.

The cord of wood or bark is 8 ft. long, 4 ft. high, and 4 ft. wide, as established by law in most of the States and the Dominion of Canada. If the wood is 8 ft. long, double the product. Fractions of feet are omitted in the table. Price will be found heading the columns, number of feet in the left hand column.

Feet long.	$1 50	$1 75	$2 00	$2 25	$2 50	$2 75	$3 00	$3 25	$3 50	$4 00	$4 50	$5 00	$5 50	$6 00	$6 50	$7 00
1	01	01	01	02	02	02	02	02	02	03	03	03	04	04	05	05
2	02	02	03	03	04	04	05	05	05	06	07	07	08	09	10	10
3	03	04	04	05	06	06	07	07	08	09	10	11	12	14	15	16
4	05	06	06	07	08	09	09	10	10	12	14	15	17	18	20	21
5	06	07	08	09	10	11	12	13	13	15	17	19	21	23	25	27
6	07	08	09	11	12	13	14	15	16	18	21	23	25	28	30	32
7	08	10	11	12	14	15	16	17	19	21	24	27	30	32	35	38
8	09	11	12	14	16	18	19	20	21	24	28	31	34	37	40	43
16	19	22	25	28	31	35	37	40	43	49	56	62	68	74	81	87
24	28	33	37	42	47	52	56	61	65	75	84	93	1 03	1 12	1 22	1 31
32	38	44	50	56	63	69	75	81	85	1 00	1 12	1 25	1 37	1 50	1 62	1 75
40	47	55	63	70	78	86	94	1 02	1 09	1 25	1 40	1 56	1 72	1 87	2 03	2 19
48	56	66	75	84	94	1 03	1 12	1 22	1 31	1 50	1 68	1 87	2 06	2 25	2 44	2 62
56	61	77	88	98	1 09	1 20	1 13	1 42	1 53	1 75	1 96	2 18	2 40	2 62	2 84	3 06
64	75	88	1 00	1 13	1 25	1 38	1 50	1 62	1 75	2 00	2 25	2 50	2 75	3 00	3 25	3 50
72	84	98	1 13	1 27	1 41	1 55	1 69	1 83	1 96	2 25	2 53	2 81	3 09	3 37	3 65	3 93
80	94	1 09	1 25	1 41	1 56	1 72	1 88	2 03	2 18	2 50	2 81	3 13	3 43	3 74	4 06	4 37
84	98	1 15	1 31	1 48	1 64	1 81	1 97	2 13	2 29	2 62	2 95	3 28	3 60	3 94	4 26	4 59
88	1 03	1 20	1 38	1 55	1 72	1 89	2 06	2 23	2 40	2 75	3 09	3 43	3 78	4 12	4 47	4 81
92	1 08	1 26	1 44	1 62	1 80	1 98	2 15	2 33	2 51	2 87	3 23	3 59	3 95	4 30	4 67	5 03
96	1 13	1 31	1 50	1 69	1 88	2 06	2 25	2 44	2 62	3 00	3 37	3 75	4 12	4 49	4 87	5 25
104	1 22	1 42	1 63	1 83	2 03	2 23	2 44	2 64	2 84	3 25	3 65	4 05	4 47	4 87	5 28	5 69
112	1 31	1 53	1 75	1 97	2 19	2 41	2 62	2 84	3 06	3 50	3 93	4 38	4 80	5 24	5 69	6 12
120	1 41	1 64	1 88	2 11	2 34	2 58	2 81	3 05	3 28	3 75	4 21	4 68	5 15	5 62	6 09	6 56
128	1 50	1 75	2 00	2 25	2 50	2 75	3 00	3 25	3 50	4 00	4 50	5 00	5 50	6 00	6 50	7 00

TIMBER MEASUREMENT TABLE.

Showing the cubical contents of round logs, masts, spars, etc. Fractions of feet omitted. Length of log is shown in left-hand column. Diameter is shown at the head of column. If the desired dimensions are not shown, double some numbers.

Feet.	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
8....	4	5	6	7	8	10	11	12	14	16	17	19	21	23	25	27	29	32	34	37	39	42	45	48	50	53	57	60
9....	5	6	7	8	9	11	12	14	16	18	20	22	24	26	28	31	33	36	38	41	44	47	50	53	57	60	64	67
10....	5	7	8	9	10	12	14	16	18	20	22	24	26	29	31	34	37	40	43	46	49	52	56	59	63	67	71	75
11...	6	7	8	10	12	13	16	17	19	22	24	26	29	32	35	37	41	43	47	50	54	57	61	65	69	73	77	82
12....	6	8	9	11	13	15	17	19	21	24	26	29	32	34	38	41	44	47	51	55	58	62	67	71	76	80	85	90
13....	7	9	10	12	14	16	18	20	23	26	28	31	34	37	41	44	48	51	55	60	64	68	72	77	82	87	92	97
14....	7	9	11	13	15	17	19	22	25	28	31	34	37	40	44	48	52	55	60	64	68	73	78	83	88	94	99	105
15....	8	10	12	14	16	18	21	23	26	30	33	36	40	43	47	51	55	59	64	69	73	78	84	89	95	100	106	112
16....	9	11	12	14	17	20	22	25	28	32	35	38	42	46	50	55	59	63	68	73	78	83	89	95	101	107	113	114
17....	9	11	13	16	18	21	24	27	30	33	37	41	45	49	53	58	63	68	73	78	83	89	95	101	107	114	121	127
18....	10	12	14	16	19	22	25	28	32	35	39	43	48	52	57	61	66	72	77	82	88	94	100	106	114	120	128	134
19....	10	13	15	17	21	23	27	30	33	37	41	45	50	55	60	65	70	75	81	87	93	99	106	112	120	127	135	142
20....	11	13	16	18	21	25	28	31	35	39	44	48	53	58	63	68	74	79	85	91	98	105	112	118	126	134	142	149
21....	11	14	16	19	22	26	29	33	37	41	46	50	55	61	66	71	77	83	90	96	103	111	117	124	132	140	149	157
22....	12	15	17	20	23	27	31	35	39	43	48	53	58	64	69	75	81	87	94	101	109	116	123	130	139	147	156	164
23....	12	16	18	21	24	28	32	36	41	45	50	55	61	66	72	78	85	91	98	105	113	121	128	136	145	154	163	172
24....	13	16	19	22	26	30	34	38	42	47	52	58	63	69	75	82	88	95	102	111	118	127	134	143	151	160	170	179
25...	14	17	20	23	27	31	35	39	44	49	54	60	66	72	79	85	92	99	107	116	123	131	139	149	158	167	178	187
26....	14	17	20	24	28	32	36	41	46	51	57	63	69	75	82	89	96	103	111	120	128	137	145	154	164	174	185	194
27....	15	18	21	25	29	33	38	42	48	53	59	65	71	78	85	92	99	107	115	125	133	142	151	160	170	180	192	202
28....	15	18	22	26	30	35	39	44	49	55	61	67	74	81	88	95	103	111	120	129	136	147	156	166	177	187	198	209
29....	16	19	23	27	31	36	41	45	51	57	63	70	77	84	91	99	167	115	124	134	143	153	162	172	183	194	206	217
30....	16	20	24	28	32	37	42	47	53	59	65	72	79	86	94	102	110	119	128	138	148	158	168	177	189	200	213	224
31....	17	20	24	29	33	38	43	48	55	61	68	75	82	89	98	106	114	123	132	143	152	163	173	182	195	207	220	232
32....	17	21	25	29	34	40	45	50	57	63	70	77	85	92	100	109	118	127	137	148	157	169	178	188	202	214	227	239
33....	18	22	26	30	35	41	46	52	58	65	72	79	87	95	104	112	121	130	141	152	162	174	184	194	208	220	234	247
34...	19	22	27	31	36	42	48	53	60	67	74	82	89	98	107	116	125	135	145	157	167	179	190	200	214	227	241	254
35....	19	23	28	32	37	43	49	55	62	69	76	84	92	101	110	119	129	139	149	161	172	182	196	205	220	234	248	261
36....	20	24	28	33	39	44	50	57	64	71	79	86	95	104	113	123	133	143	154	166	177	190	201	212	227	240	255	269

LUMBER MEASUREMENT TABLE.

Square timber and scantling. Measurement at sight. Dimensions in inches head each column, and the length will be found in the left-hand column. If the required dimensions cannot be found in the table, add two lengths or breadths together, or take part of some length or breadth, as the case may require.

Feet.	6.11.	6.12.	7.7.	7.8.	7.9.	7.10.	7.11.	7.12.	8.8.	8.9.	8.10.	8.11.	8.12.	9.9.	9.10.	9.11.	9.12.	10.10.	10.11.	10.12.	11.11.	11.12.	12.12.
6	33.	36.	24. 6	28.	31.6	35.	38. 6	42.	32.	36.	40	44.	48.	40.6	45.	49.6	54.	50.	55.	60.	60. 6	66.	72.
7	38.6	42.	28. 7	32.8	36.9	40.10	41.11	49.	37.4	42.	46.8	51.4	56.	47.3	52.6	57.9	63.	58.4	64. 2	70.	70. 7	77.	84.
8	44.	48	32. 8	37.4	42.	46. 8	55. 4	56.	42.8	48.	53.4	58:8	64.	54.	60.	66.	72.	66.8	73. 4	80	80. 8	88.	96.
9	49.6	54	36 9	42.	47.3	52. 6	57. 9	63.	48.	54.	60.	66.	72.	60.9	67.6	74.3	81.	75.	86. 6	90.	90. 9	99.	108.
10	55.	60.	40.10	46.8	52.6	58. 4	64. 2	70.	53.4	60.	66.8	73.4	80.	67.6	75.	82.6	90.	83.4	91. 8	100.	100.10	110.	120.
11	60.6	66.	40.11	51.4	57.9	64. 2	70. 7	77.	58.8	66.	73.4	80.8	88.	74.3	82,6	90.9	99.	91.8	100.10	110.	110.11	121.	132.
12	66.	72.	49.	56.	63.	70.	77.	84.	64.	72.	80.	88.	96.	81.	90.	99.	108.	100.	110.	120.	121.	132.	144.
13	71.6	78.	53. 1	60.8	68.3	75.10	83. 5	91.	69.4	78.	86.6	95.4	104.	87.9	97.6	107.3	117.	108.4	119. 2	130.	131. 1	143.	156.
14	77.	84.	57. 2	65.4	73.6	81. 8	89.10	98.	74.8	84.	93.4	102 8	112.	94.6	105.	115.6	126.	116.8	128. 4	140.	141. 2	154.	168.
15	82.6	90.	61. 3	70.	78.9	87. 6	96. 3	105.	80.	90.	100.	110.	120.	101.3	112.6	123.9	135.	125.	137. 6	150.	151. 3	165.	180.
16	88.	96.	64. 4	74.8	84.	93. 4	102. 8	112.	85.4	96.	106.8	117.4	128.	168.	120.	132.	144.	133.4	146. 8	160.	161. 4	176.	192.
17	93.6	102.	69. 5	79.4	89.3	99. 2	109. 1	119	90.8	102.	113 4	124.8	136.	114.9	127,6	140.3	153.	141.8	155.10	170.	171. 5	187.	204.
18	99.	108.	73. 6	84.	94.6	105.	115. 6	126.	96.	108.	120.	132.	144.	121.6	135.	148.6	162.	150.	165.	180.	181. 6	198.	216.
19	104.6	114.	77. 7	88.8	99.9	110.10	121.11	133.	101.4	114.	126.8	139.4	152.	128.3	142.6	156.9	171.	158.4	174. 2	190.	191. 7	209.	228.
20	110.	120.	81. 8	93.4	105.	116. 8	128. 4	140.	106.8	120.	133.4	146.8	160.	135.	150.	165.	180.	166.8	183. 4	200.	201. 8	220.	240.
21	115.6	126.	85. 9	98.	110.3	122. 6	134. 9	147.	112.	126.	140.	154.	168.	141.9	157.6	173.3	189.	175.	192. 6	210.	211. 9	231.	252.
22	121.	132.	89.10	102.8	115.6	128. 5	141. 2	154	117.4	132.	146.8	161.4	176.	148 6	165.	181.6	198.	183.4	201. 8	220.	221.10	242.	264.
23	126.6	138.	93.11	107.4	120.9	134. 2	147. 7	161.	122.8	138.	153.4	168.8	184.	155.3	172.6	189.9	207.	191.8	210.10	230.	231.11	253.	276.
24	132.	144.	98.	112.	126.	140.	154.	168.	128.	144.	160.	176.	192.	162.	180.	198.	216.	200.	220.	240.	242.	264.	288.
26	143.	156.	106. 2	121.4	136.6	151. 8	166.10	182.	138.8	156.	173.4	190.8	208.	175.6	195.2	214.6	234.	216.8	238. 4	260.	262. 2	286.	312.
28	154.	168.	114. 4	130.8	147.	163.	179. 8	196.	148.8	168.	186-8	205.4	224.	189.	210.	231.	252.	233.8	256. 8	280.	282. 4	308.	336.
30	165.	180.	122. 6	140.	157.6	175.	192. 6	210,	160.	180.	200	220.	240.	202.6	225.	247.6	270.	250.	275. 6	300.	302. 6	330.	370.
32	176.	192.	128. 8	149.4	168.	186. 8	205. 4	224.	170.8	192.	213.8	234.8	256.	216.	210.	264.	288.	266.8	293. 4	320.	322. 8	352.	384.

How Van Buskirk's Sozodont is Made.

Castile soap, 1¼ drams; glycerine, 1¼ drams; alcohol, 1 ounce; soft water, 4 ounces; oil of wintergreen, oil of cinnamon, oil of anise (either), sufficient to flavor. Mix. Accompanying this is a powder which is composed of equal parts of chalk (prepared), orris root, and carbonate of magnesia.

How to Preserve Meat.

Meat of any kind may be preserved in a temperature of from 80° to 100° for a period of ten days after it has been soaked in a solution of 1 pint of salt dissolved in 4 gallons of cold water and ½ gallon of a solution of bisulphate of calcium. By repeating this process the preservation may be extended by the addition of a solution of gelatine or the white of an egg to the salt and water.

How to Cut or Bore Glass.

Any hard steel tooth will cut glass with great facility when kept wet with camphor dissolved in turpentine. A drill bow may be used, or even the hand alone. A hole may be readily enlarged by a round file. The ragged edges of glass vessels may also be thus easily smoothed by a flat file. Flat window glass can readily be sawed with a watch-spring saw by the aid of this solution. In short, the most brittle glass can be wrought almost as easily as brass, by the use of cutting tools kept constantly wet with camphorated oil of turpentine.

How to Make Hens Lay in Winter.

Give a portion of minced meat, mixed with their other food, every day, or as often as convenient, and see that they have plenty of gravel, old plastering, or powdered egg-shells. The latter may be mixed with their food. Without some substance of this kind, which cannot be obtained when the ground is frozen or covered with snow, there will be nothing to form the shell.

The "Sun" Cholera Mixture.

Tincture of opium, 2 oz.; tincture of camphor, 2 oz.; tincture of capsicum, 2 oz.; tincture of rhubarb, 2 oz.; tincture of peppermint, 2 oz. Mix. Dose—A teaspoonful in water after each evacuation of the bowels.

Of What Muscles Consist, and How Many Muscles a Human Body Has.

A muscle consists of three parts muscular flesh or belly, fascia and tendon, the two last attachments brought together by the swelling of the belly. The head has 77 muscles; the eye, 8; the nose, 1; lips, 8; jaw, 8; tongue, 11; larynx, 11; ear, 11; head and neck, 17; to move the hairy scalp, 1; the eyebrows, 1; the chest, abdomen, and loins, 5; the shoulder, 15; the arm and wrist, 15; the hands and fingers, 23; the hip, 10; the thigh, 14; leg and foot, 24. Contracting muscles are called *flexor* muscles; expanding muscles, *extensor*.

IMPORTANT ITEMS CONCERNING OCEAN TRAVEL.

NUMBER OF STEAMERS.—There are about 10,000 steamers at present afloat on the various great rivers, seas and oceans.

MAIL STEAMSHIPS.—The Cunard Line has carried the ocean mails since 1840. The earlier steamers of this line, for several years, were all side-wheelers.

A KNOT.—In sailor phrase a knot is a nautical mile, and includes 6,080 feet. By United States surveyors' measure a mile includes 5,280 feet.

FIRST OCEAN PROPELLER.—The method of moving vessels by screw propulsion, was invented by Ericsson, in 1836, and was practically applied on the Great Britain, which made the trip from Liverpool to New York in 14 days, 21 hours, in 1845.

FIRST STEAMER CROSSING OCEAN.—The Savannah, 380 tons, launched at Corlear's Hook, New York, in 1818, was the first vessel using steam to cross the ocean, the journey from Savannah to Liverpool being made in 1819 in 25 days, using steam 18 days.

FOG.—The passenger should not grumble at fog. It should be understood that this dense mist is the method pursued by Nature in taking up moisture from the ocean into the atmosphere to be wafted into clouds thousands of miles inland, to fall upon the earth in refreshing rain.

CROSSING OCEAN—TIME IN 1838.—The Great Western, 750 tons, the largest steamer at that time, made the journey from Bristol, England, to New York in 15 days, April, 1838; brought over 7 passengers; carried back 66 passengers, and made return trip in 14 days. Coal consumed on westward trip, 655 tons; consumed on return trip, 392 tons.

SPEED AND DANGER.—Experience has proved that the greater the speed the greater the safety, rapid sailing vessels being able to escape the area of the fog and storm more quickly than the slow ship. The rapid sailor can be more easily manoeuvred than the slower vessel, and if collision becomes unavoidable, the great impetus of the rapid sailing ship will cause it to cut the opposing vessel in two, with but little damage to itself.

THE GREAT EASTERN.—Designed by Brunèl, was begun at Millwall, London, in 1854, and was launched in 1858; was 680 feet long, 83 feet broad, draught of 25 feet; had screw engines of 4,000 horse-power, and paddle engines of 2,600 horse-power. Served in the laying of the Atlantic cable. but was unfitted for ocean use in competition with the more rapid sailing vessels, which made their journeys at less expense. Was sold in 1887 for $40,000, and was broken up.

DREAMS=THEIR MEANING.

An Owl, sickness.
Apples, long life.
Knives, lawsuit.
Rainbow, long journey.
To Fly, great wealth.
Mice, slow accumulation of riches.
Rats, enemies.
Moon, pleasure.
Crocodile, danger.
Frogs, success in business or love.
Fox, beware of Swindlers.
Bleeding, losses.
Climbing a Tree, hono.
Butcher, misfortune.
Elephant, good luck.
To Eat Onions, a discovery of importance.
Alone in a Boat, friends will forsake you when in trouble.
A Barn, dispute and gain.
Poorhouse, marriage.
At Church, gain by lawsuit.
Bells, good news.
Driving Cattle, riches.
A Bear, beware a mean enemy.
Cats, misfortunes.
Loss of Eyesight, one of your friends is a villain-
Kissing, unexpected benefit.
Pigeons, good news.
Gold, difficulties you will overcome.
Snakes, enemies; if you kill one, success.
Peacock, you will marry a handsome person.
Oysters, good luck.
Gallows, a lucky dream.
Monkey, deceit in love.
Buildings, change of residence.
Eating Soup, good health.
Wearing Silks, final wealth and much happiness.
To See a Light Go Out, misfortune.
To Light a Candle, a new friend.
Bacon, death.
Hunger, wealth.
Ladder, good fortune.
Paying Money, you will win a lawsuit.
Devil, dangers you will overcome.
Fleas, great annoyance.
Walking, you have a near enemy.
Hen and Chickens, disappointment in love.
Beans, quarrels.
Giant, good luck.
Ants, losses.
To Beg, you are being robbed.
Dog, you will make up with a friend with whom you quarrelled.
Bees, loss of sweetheart or wife.
Dice, money by one's death.
Eggs, success.
Fire, bad quarrel.
Eagle, a fortune, probably through a journey.
Deer, scarcity of food.
Birds, success in business.
Funeral, a marriage among your acquaintances.
Shaving, you will be jilted by your sweetheart.
Purse, unexpected success.
Gathering Flowers, great gain.
Mud, trouble ahead.
Reading, increase in fortune.
Clear Water, success.
Cucumbers, health; recovery to the sick.
Eyes, loss of property.
Flies, enemies.
Grave, long spell of illness.
Marriage, poverty.
A Bridge, success in love.
Eating Cake, increase in property.

POPULAR and ELECTORAL VOTES for PRESIDENTS.

YEAR.	CANDIDATES.	PARTY.	Popular Vote.	Elec'l Vote.
1832	Andrew Jackson	Democrat	687,502	219
1832	Henry Clay	Nat. Republican	530,189	49
1832	John Floyd	Whig		11
1832	William Wirt	Whig		7
1836	Martin Van Buren	Democrat	761,549	170
1836	W. H. Harrison	Whig	736,656	73
1836	Hugh L. White	Whig		26
1836	Daniel Webster	Whig		14
1836	W. P. Mangum	Whig		11
1840	Martin Van Buren	Democrat	1,128,702	48
1840	W. H. Harrison	Whig	1,275,017	234
1844	James K. Polk.	Democrat	1,337,243	170
1844	Henry Clay	Whig	1,299.068	105
1848	Zachary Taylor	Whig	1,360,101	163
1848	Lewis Cass	Democrat	1,220.544	127
1848	Martin Van Buren	Free Soil	291.263	....
1852	Franklin Pierce	Democrat	1,601.474	254
1852	Winfield Scott	Whig	1,386,578	42
1852	John P. Hale	Free Soil	156,149	....
1856	James Buchanan	Democrat	1,838,169	174
1856	John C. Fremont	Republican	1,341,262	114
1856	Millard Fillmore	American	874,534	8
1860	Abraham Lincoln	Republican	1,866.352	180
1860	Stephen A. Douglas	Democrat	1,375,157	12
1860	John C. Breckenridge	Democrat	845,763	72
1860	John Bell	Union	589,581	39
1864	Abraham Lincoln	Republican	2,216.067	212
1864	George B. McClellan	Democrat	1,808.725	21
1868	U. S. Grant	Republican	3,015.071	214
1868	Horatio Seymour.	Democrat	2,709,613	80
1872	U. S. Grant	Republican	3,597,070	286
1872	Horace Greeiy	Liber'l and Dem.	2,834.079	....
1872	James Black	Prohibition	5,608	....
1876	R. B. Hayes	Republican	4.033.950	185
1876	Samuel J. Tilden	Democrat	4,284,885	184
1876	Peter Cooper	Greenback	81,740	....
1876	G. C. Smith	Prohibition	9,522	....
1880	James A. Garfield	Republican	4,449.053	214
1880	Winfield S. Hancock	Democrat	4,442.035	155
1880	James B. Weaver	Greenback	307.306	....
1884	Grover Cleveland	Democrat	4,911,017	219
1884	James G. Blaine	Republican	4,848,334	182
1884	Benj. F. Butler	Greenback	133,825	....
1884	John P. St. John	Prohibition	151,800	....
1888	Benjamin Harrison	Republican	5,441,902	233
1888	Grover Cleveland	Democrat	5,538,560	168
1888	Fisk	Prohibition	249.937	....
1888	Labor Vote		147,521	....
1892	Grover Cleveland	Democrat	5,553,142	277
1892	Benjamin Harrison.	Republican	5,186,931	145
1892	James B. Weaver.	People's	1.030,128	22
1892	John Bidwell	Prohibitory	268,361	....

POPULATION OF EVERY STATE AND TERRITORY, Etc.

UNITED STATES CENSUS OF 1890.

STATES.	Population.	Square Miles.	Electoral Vote.
Alabama	1,513,017	52,250	10
Arkansas	1,128,179	53,850	7
California	1,208,130	158,360	8
Colorado	412,198	103,925	3
Connecticut	746,258	4,990	6
Delaware	168,493	2,050	3
Florida	391,422	58,680	4
Georgia	1,837,353	59,475	12
Idaho	84,385	84,800	3
Illinois	3,826,351	56,650	22
Indiana	2,192,404	36,350	15
Iowa	1,911,896	56,025	13
Kansas	1,427,096	82,080	9
Kentucky	1,858,635	40,400	13
Louisiana	1,118,587	48,720	8
Maine	661,086	33,040	6
Maryland	1,042,390	12,210	8
Massachusetts	2,238,943	8,315	14
Michigan	2,093,889	58,915	13
Minnesota	1,301,826	83,365	7
Mississippi	1,289,600	46,810	9
Missouri	2,679,184	69,415	16
Montana	132,159	146,080	3
Nebraska	1,058,910	77,510	5
Nevada	45,761	110,700	3
New Hampshire	376,530	9,305	4
New Jersey	1,444,933	7,815	9
New York	5,997,853	49,170	36
North Carolina	1,617,947	52,250	11
North Dakota	182,719	68,645	3
Ohio	3,672,316	41,060	23
Oregon	313,767	96,030	3
Pennsylvania	5,258,014	45,215	30
Rhode Island	345,506	1,250	4
South Carolina	1,151,149	30,570	9
South Dakota	328,808	79,800	4
Tennessee	1,766,518	42,050	12
Texas	2,235,523	265,780	13
Vermont	332,422	9,565	4
Virginia	1,655,980	42,450	12
Washington	349,390	69,180	3
West Virginia	762,794	24,780	6
Wisconsin	1,686,880	56,040	11
Wyoming	60,705	97,890	3
Delaware, Raritan and New York Bays		720	..
TOTAL, STATES,	61,908,906	2,634,530	420
TERRITORIES.			
Arizona	59,620	113,020	
District of Columbia	230,392	70	
New Mexico	153,593	122,580	
Oklahoma	61,834	39,450	
Utah	207,905	84,970	
TOTAL, TERRITORIES,	713,344	360,090	
Excluding Alaska, Indian Territory and Indians........**Grand Total,**	62,622,250		

DIGESTION.

Average time required for the digestion of various articles of food:

	Hours.	*Min.*
Apples, sweet (boiled)	2	30
Barley (boiled)	2	
Beans, Lima (boiled)	2	30
Beef (roasted)	3	
Beef (fried)	4	
Beef, salt (boiled)	2	45
Bread	3	30
Butter	3	30
Cheese	3	30
Chicken (fricasseed)	2	40
Custard (baked)	2	45
Duck (roasted)	4	
Eggs (raw)	2	
Eggs (soft-boiled)	3	
Eggs (hard-boiled)	3	30
Eggs (fried)	3	30
Fish, various kinds (raw, boiled, fried)	2	44
Fowl (roast)	4	
Hashed meat and vegetables (warm)	2	30
Lamb (boiled)	2	30
Milk (raw)	2	15
Milk (boiled)	2	
Mutton (boiled)	3	
Mutton (roast)	3	15
Oysters (roast)	3	15
Oysters (stewed)	3	30
Pigs' feet, soused (boiled)	1	
Potatoes (baked)	2	30
Pork, salt (stewed)	3	
Pork (roast)	3	15
Rice (boiled)	1	
Sago (boiled)	1	45
Soup, barley	1	30
Soup, chicken, etc. (average)	3	15
Tripe, soused (boiled)	1	
Turkey (roast)	2	30
Veal (boiled)	4	
Veal (fried)	4	30

AMERICAN AND IMPORTED PUBLICATIONS (IN ENGLISH) FOR THE YEAR 1894.

The following table does not include Government works or cheap libraries of a lower order:

Fiction	729	Biography and Memoirs	161
Law	485	Fine Arts and Illus. Books	138
Juvenile Books	344	Physical and Math. Science	164
Literary, History and Miscel.	237	Useful Arts	138
Theology and Religion	468	Sports and Amusements	56
Education and Language	442	Domestic and Rural	51
Poetry and the Drama	266	Humor and Satire	10
History	187	Mental and Moral Philosophy	49
Medical Science and Hygiene	160		
Social and Political Science	254		
Description and Travel	144	Total	4,484

British publications, the same year, 6,485 volumes.

Many of the American productions are reprints of English works.

Dates of First Occurrences.

Postoffices were first established in 1464.

Printed musical notes were first used in 1473.

The first watches were made at Nuremberg in 1477.

America was discovered in 1492.

The first printing press was set up at Copenhagen in 1493.

Durer gave the world a prophecy of future wood-engraving in 1527.

Jergens set the spinning wheel in motion in 1530.

Modern needles first came into use in 1545.

The first knives were used in England, and the first wheeled carriages in France, in 1559.

Religious liberty was granted to the Huguenots in France in 1562, and was followed by the massacre of St. Bartholomew in 1572.

Cervantes wrote Don Quixote in 1573.

The first newspaper was published in England in 1588.

Telescopes were invented in 1590.

The first printing-press in the United States was introduced in 1629.

The first air-pump was made in 1650.

The first newspaper advertisement appeared in 1652.

The first copper cent was coined in New Haven in 1687.

The first steam-engine on this continent came from England in 1753.

The first balloon ascent was made in 1783.

The first society for the Promotion of Christian Knowledge was organized in 1698.

The first attempt to manufacture pins in this country was made soon after the war of 1812.

The first prayer-book of Edward VI. came into use by authority of Parliament on Whit-Sunday, 1549.

Glass windows first introduced into England in the eighth century.

The first steamboat plied the Hudson in 1807.

The first sawmakers' anvil was brought to America in 1819.

The first use of a locomotive in this country was in 1820.

Kerosene was first used for lighting purposes in 1826.

The first horse railroad was built in 1826–7.

The first lucifer match was made in 1829.

The first iron steamship was built in 1830.

The first steel pen was made in 1830.

Omnibuses were introduced in New York in 1830.

Ships were first "copper-bottomed" in 1837.

Envelopes were first used in 1839.

Anæsthesia was discovered in 1844.

Coaches were first used in England in 1569.

The first steel-plate was discovered in 1830.

The Franciscans arrived in England in 1224.

The entire Hebrew Bible was printed in 1488.

Gold was first discovered in California in 1848.

The first telescope was used in England in 1608.

Christianity was introduced into Japan in 1549.

First almanac printed by George Von Furbach in 1460.

Percussion arms were used in the United States Army in 1830.

The first glass factory in the United States was built in 1780.

The first complete sewing-machine was patented by Elias Howe, Jr., in 1846.

The first temperance society in this country was organized in Saratoga County, N. Y., in March, 1808.

The first coach in Scotland was brought thither in 1501, when Queen Mary came from France. It belonged to Alexander Lord Seaton.

The first daily newspaper appeared in 1702. The first newspaper printed in the United States was published in Boston on September 25, 1790.

The first telegraphic instrument was successfully operated by S. F. B. Morse, the inventor, in 1835, though its utility was not demonstrated to the world until 1842.

The first Union flag was unfurled on the 1st of January, 1776, over the camp at Cambridge. It had thirteen stripes of white and red, and retained the English cross in one corner.

When Captain Cook first visited Tahiti, the natives were using nails of wood, bone, shell and stone. When they saw iron nails, they fancied them to be shoots of some very hard wood, and, desirous of securing such a valuable commodity, they planted them in their gardens.

In 1750 the "shoe-black" came into vogue. The poet Gay, in his day, refers to the business, describing a mother as instructing her son in his calling:

"Go thrive: at some frequented corner stand;
This brush I give thee, grasp it in thy hand;
Temper the foot within this vase of oil,
And let the little tripod aid thy toil."

DISTANCE AND TIME BETWEEN VARIOUS POINTS.

Chicago is 900 miles west of New York.

It is 1825 miles from Washington to Panama.

Little Rock is 1298 miles west of New York.

Gibraltar is 3150 miles southeast of Washington.

Halifax is 780 miles northeast of Washington.

Honolulu is 4513 miles west of Washington City.

From Washington to Athens, Greece, is 5005 miles.

San Francisco, Cal., is 3250 miles west of New York.

It is 4880 miles from Washington to Constantinople.

Edinburgh is 3275 miles northeast of Washington.

Jerusalem is 5495 miles east of our national capital.

In ten days a letter from New York will arrive at Bremen.

From New York to Los Angeles is a journey of 3107 miles.

From Venice to Washington is a distance of 3835 miles.

From Washington to Rio Janerio the distance is 4280 miles.

From Washington to Alexandria, in Egypt, is 5275 miles.

The distance between Washington and Liverpool is 3228 miles.

Ten days are required to carry a letter from New York to Berlin.

From Calcutta to Washington the voyage is 9348 miles in length.

The traveler from New York may reach Sydney in thirty-one days.

There are 3485 miles of travel between Paris and Washington City.

The distance between Washington and St. Petersburg is 4296 miles.

There are 882 miles of distance between Atlanta and New York City.

Mail from New York will be delivered in Buda-Pesth eleven days later.

Moscow, the ancient capital of the Czars, is 4466 miles rom Washington.

HANDY ATLAS—50 FULL PAGE MAPS.

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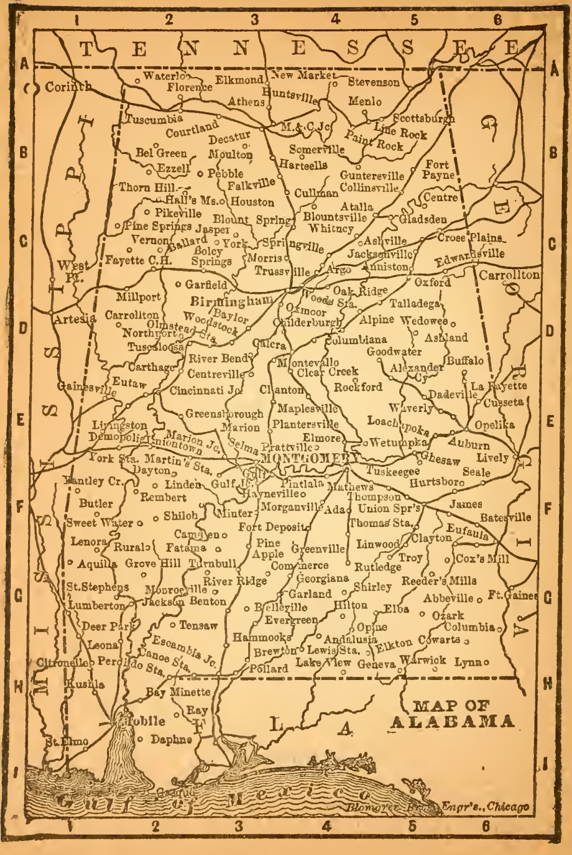
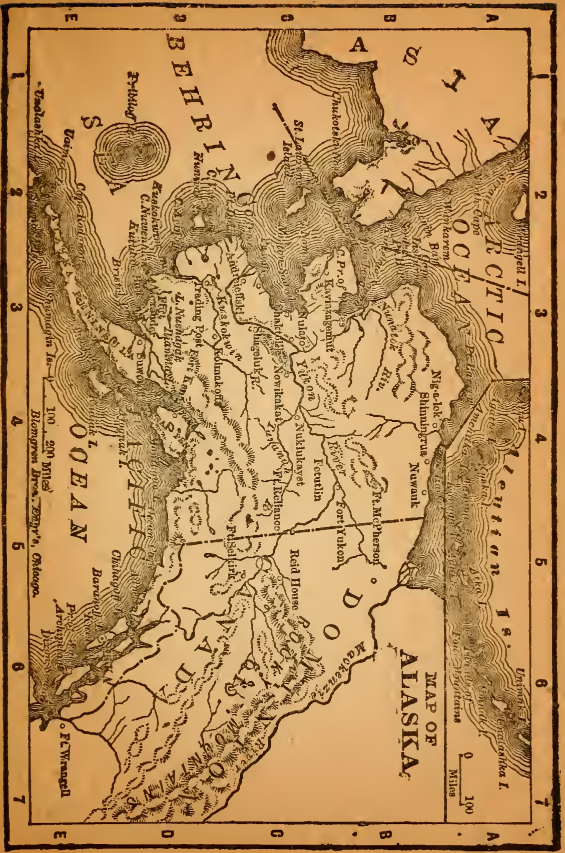


MAP OF ALABAMA

Blomgren Bros. Engr's., Chicago


MAP OF ALASKA.
ASIA
ARCTIC OCEAN
BEHRING SEA
PACIFIC OCEAN
DOMINION
Wrangell I.
Aleutian Is.
St. Lawrence Island
Pribiloff
Unalaska
Shumagin Is.
Chukotskoi
C. Pr. of Wales
Kavinzagemut
Nulato
Yukon
Nowikakat
Nuklukayet
Fotutlin
Ft. Reliance
Fort Yukon
Ft. McPherson
Reid House
Ft. Selkirk
Mackenzie
Nig-a-lok
Shinningrus
Nuwauk
Noatok
Riv.
Shageluk R.
Kuskokwim
Kolmakoff
Trading Post
L. Nushagak
Fort Kenai
Bristol
Chilkat
Baranoff
Archipelago
Ft. Wrangell
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Unalashka I.
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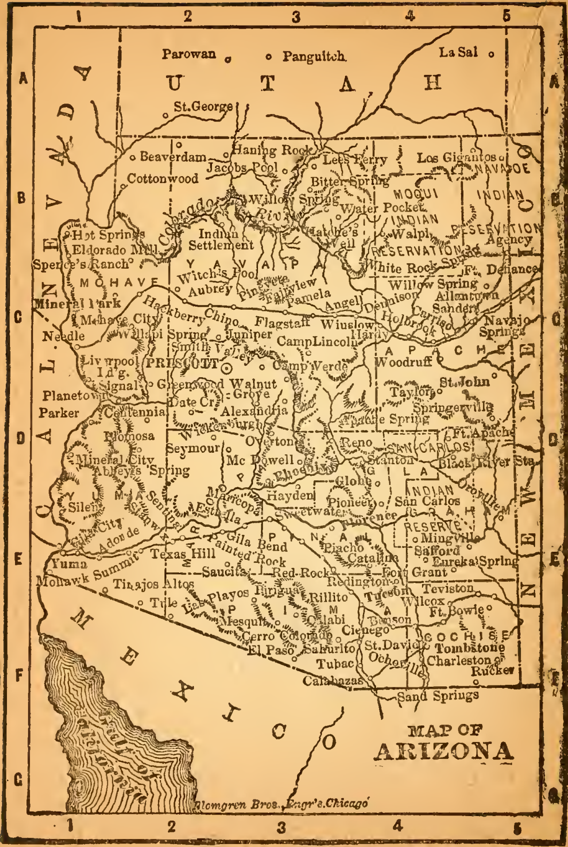
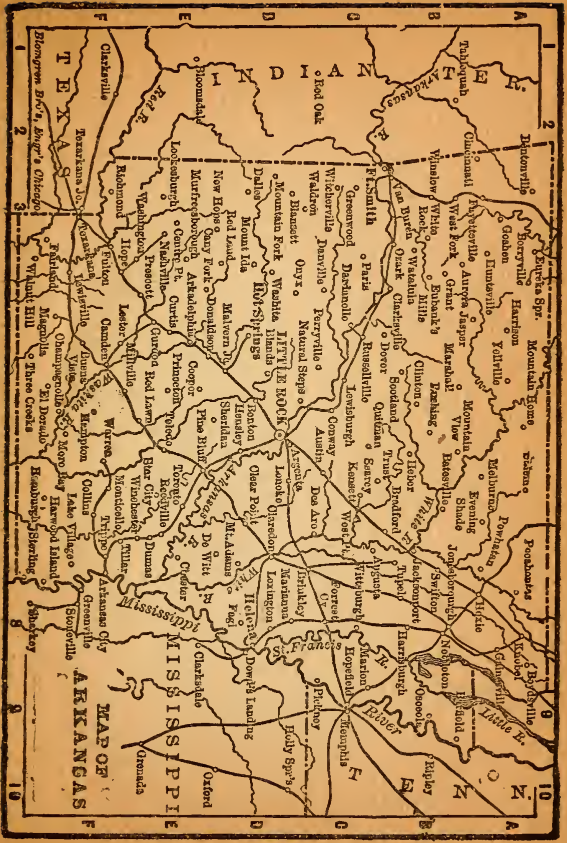


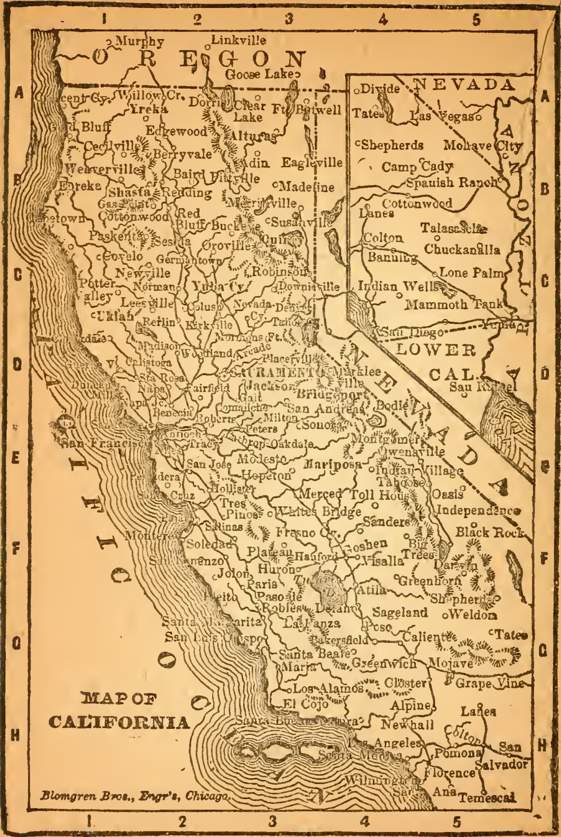
MAP OF ARIZONA

Blomgren Bros. Engr's.Chicago



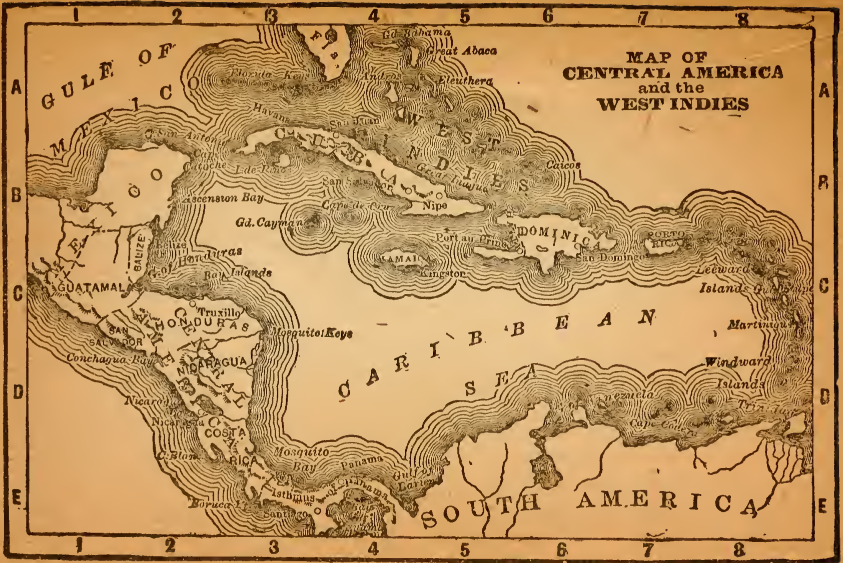
MAP OF ARKANSAS

Blomgren Bro's, Engr's Chicago

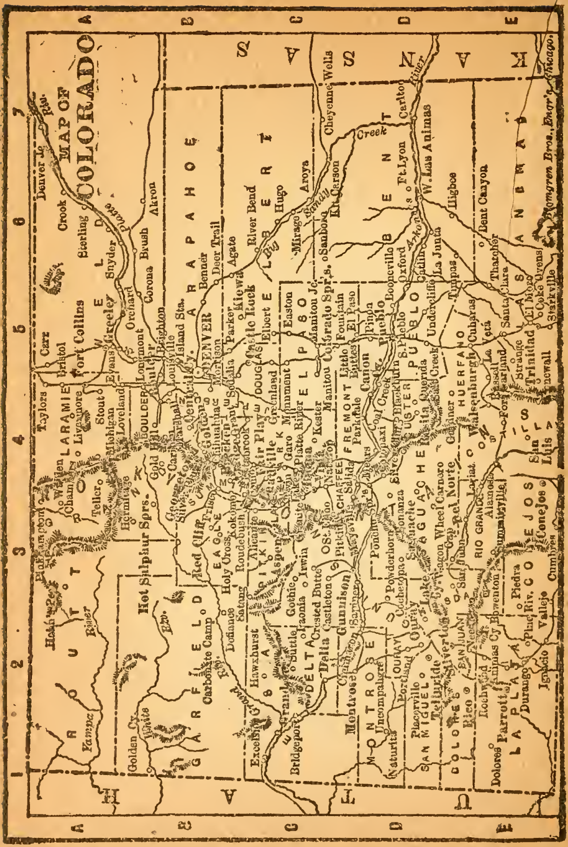


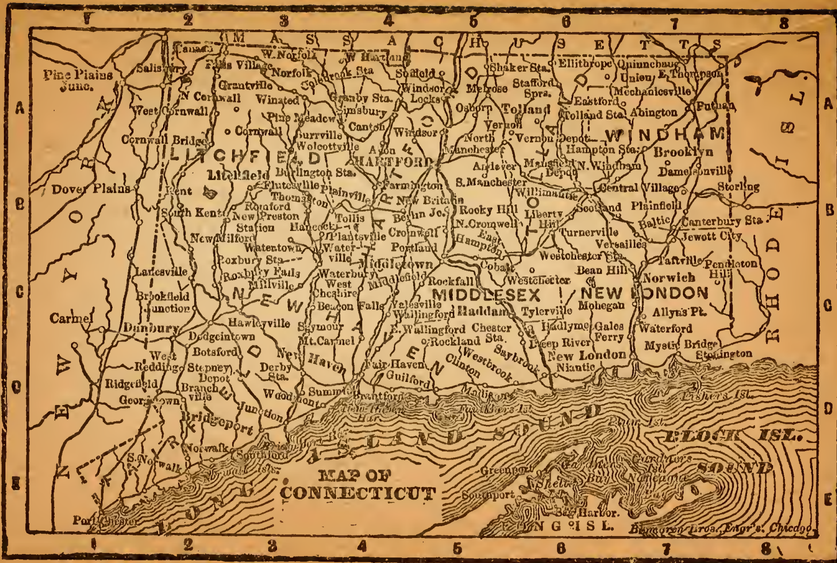
MAP OF CALIFORNIA

Blomgren Bros., Engr's, Chicago



MAP OF
CENTRAL AMERICA
and the
WEST INDIES


MAP OF COLORADO
Blomgren Bros., Engr's, Chicago.
LARAMIE
WELD
ARAPAHOE
ELBERT
BENT
LAS ANIMAS
ROUTT
GRAND
SUMMIT
BOULDER
GARFIELD
EAGLE
PITKIN
LAKE
PARK
EL PASO
DOUGLAS
FREMONT
CHAFFEE
GUNNISON
DELTA
MONTROSE
OURAY
SAN MIGUEL
DOLORES
SAN JUAN
LA PLATA
CONEJOS
COSTILLA
RIO GRANDE
SAGUACHE
CUSTER
HUERFANO
PUEBLO
NEBRASKA
KANSAS
UTAH
Denver
Fort Collins
Greeley
Sterling
Colorado Spr's.
Pueblo
Trinidad
Leadville
Aspen
Durango
Gunnison
Montrose
Delta
Ouray
Silverton
Telluride
Boulder
Longmont
Golden
Georgetown
Canon
Salida
Buena Vista
Walsenburg
Del Norte
La Junta
W. Las Animas
Akron
Hugo
Kit Carson
Cheyenne Wells
Red Cliff
Glenwood Spr's.
Hot Sulphur Sprs.
Grand Jc.


MAP OF CONNECTICUT
MASSACHUSETTS
RHODE ISL.
NEW YORK
LITCHFIELD
HARTFORD
TOLLAND
WINDHAM
NEW HAVEN
MIDDLESEX
NEW LONDON
FAIRFIELD
LONG ISLAND SOUND
BLOCK ISL.
LONG ISL.
Pine Plains Junc.
Salisbury
Canaan
Falls Village
W. Norfolk
Norfolk
W. Hartland
Suffield
Shaker Sta.
Ellithrope
Quinnebaug
Union
E. Thompson
Grantville
N Cornwall
West Cornwall
Winsted
Granby Sta.
Windsor Locks
Melrose
Stafford Sprs.
Eastford
Mechanicsville
Putnam
Cornwall Bridge
Cornwall
Pine Meadow
Simsbury
Canton
Burrville
Wolcottville
Windsor
Osborn
Tolland
Vernon
Tolland Sta.
Abington
North Manchester
Vernon Depot
Hampton Sta.
Brooklyn
Avon
Manchester
Mansfield Depot
N. Windham
Danielsonville
Dover Plains
Litchfield
Burlington Sta.
Farmington
S. Manchester
Andover
Willimantic
Central Village
Sterling
Kent
Plymouth
Thomaston
Plainville
New Britain
Rocky Hill
Liberty Hill
Scotland
Plainfield
South Kent
Romford
New Preston Station
Tollis
Hancock
Berlin Jc.
N. Cromwell
East Hampton
Baltic
Canterbury Sta.
New Milford
Watertown
Plantsville
Waterville
Cromwell
Portland
Turnerville
Versailles
Jewett City
Roxbury Sta.
Middletown
Westchester Sta.
Taftville
Pendleton Hill
Lanesville
Roxbury Falls
Millville
Waterbury
West Cheshire
Middlefield
Rockfall
Cobalt
Westchester
Bean Hill
Norwich
Brookfield Junction
Beacon Falls
Yalesville
Wallingford
Haddam
Tylerville
Mohegan
Allyn's Pt.
Carmel
Danbury
Hawleyville
Seymour
E. Wallingford
Chester
Hadlyme
Gales Ferry
Waterford
Dodgeintown
Mt. Carmel
Rockland Sta.
Deep River
Mystic Bridge
West Redding
Botsford
New Haven
Saybrook
New London
Stonington
Ridgefield
Stepney Depot
Derby Sta.
Fair Haven
Westbrook
Niantic
Georgetown
Branchville
Woodmont
Summit
Guilford
Clinton
Branford
Madison
Bridgeport
Junction
Norwalk
S. Norwalk
Southport
Port Chester
Greenport
Southport
Shelter Isl.
Gardiner's Isl.
Sag Harbor
Fisher's Isl.
Bergmann Bros. Engr's, Chicago
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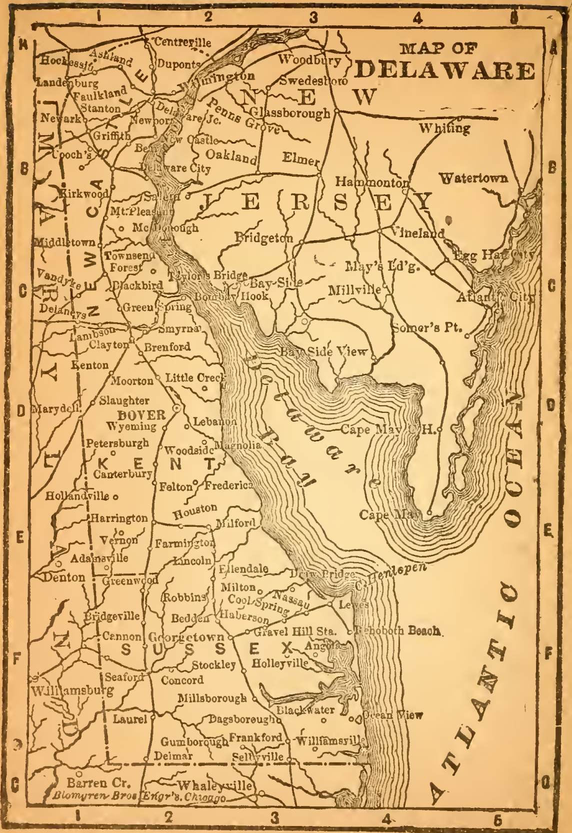
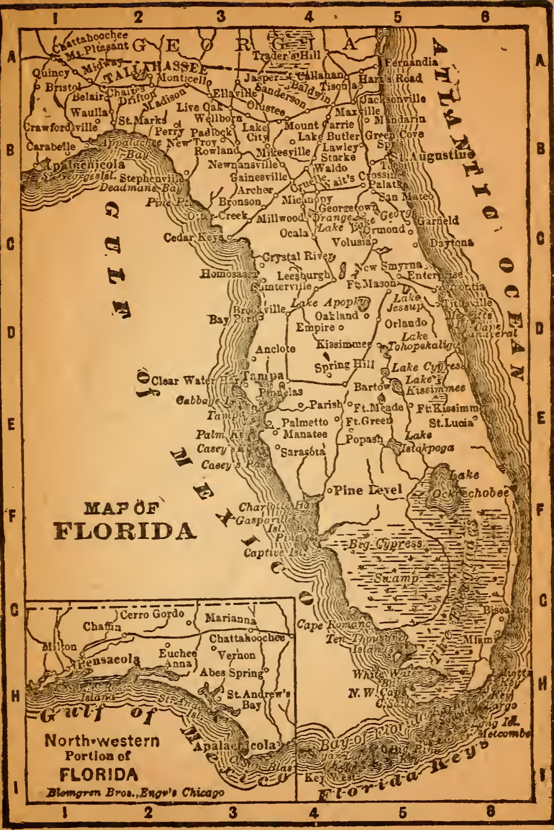


Blomgren Bros Engr's. Chicago


MAP OF
FLORIDA
GEORGIA
ATLANTIC OCEAN
GULF of MEXICO
Chattahoochee
Mt. Pleasant
Midway
TALLAHASSEE
Quincy
Bristol
Monticello
Belair
Chaires
Drifton
Madison
Waulla
Crawfordville
St. Marks
Carabelle
Apalachicola
St. George Isl.
Apalachee Bay
Stephensville
Deadmans Bay
Pine Pt.
Perry
Padlock
New Troy
Rowland
Live Oak
Wellborn
Ellaville
Jasper
Trader's Hill
Callahan
Baldwin
Sanderson
Olustee
Lake City
Mount Carrie
Lake Butler
Mikesville
Newnansville
Gainesville
Archer
Bronson
Otter Creek
Cedar Keys
Millwood
Micanopy
Waldo
Starke
Lawley
Fernandia
Hart's Road
Tisonia
Jacksonville
Maxville
Mandarin
Green Cove Springs
St. Augustine
Tocoi
Wait's Crossing
Palatka
San Mateo
Orange Lake
Georgetown
Lake George
Ocala
Ormond
Garfield
Volusia
Daytona
Crystal River
Homosassa
Leesburgh
Sumterville
New Smyrna
Enterprise
Ft. Mason
Aurantia
Titusville
Lake Jessup
Brooksville
Lake Apopka
Bay Port
Oakland
Empire
Orlando
Cape Canaveral
Kissimmee
Lake Tohopekaliga
Anclote
Spring Hill
Lake Cypress
Clear Water Har.
Tampa
Pinellas
Bartow
Lake Kissimmee
Cabbage Isl.
Tampa Bay
Parish
Ft. Meade
Ft. Kissimmee
Palmetto
Manatee
Ft. Green
St. Lucia
Palm Key
Casey's Key
Casey's Pass
Sarasota
Popash
Lake Istokpoga
Pine Level
Lake Okeechobee
Charlotte Har.
Gasparilla Isl.
Pine Isl.
Captive Isl.
Big Cypress Swamp
Biscayne
Cape Romano
Ten Thousand Islands
Miami
White Water Bay
N. W. Cape
C. Sable
Key Largo
Long Isl.
Metcombe
Bay of Florida
Big Pine Key
Key West
Florida Keys
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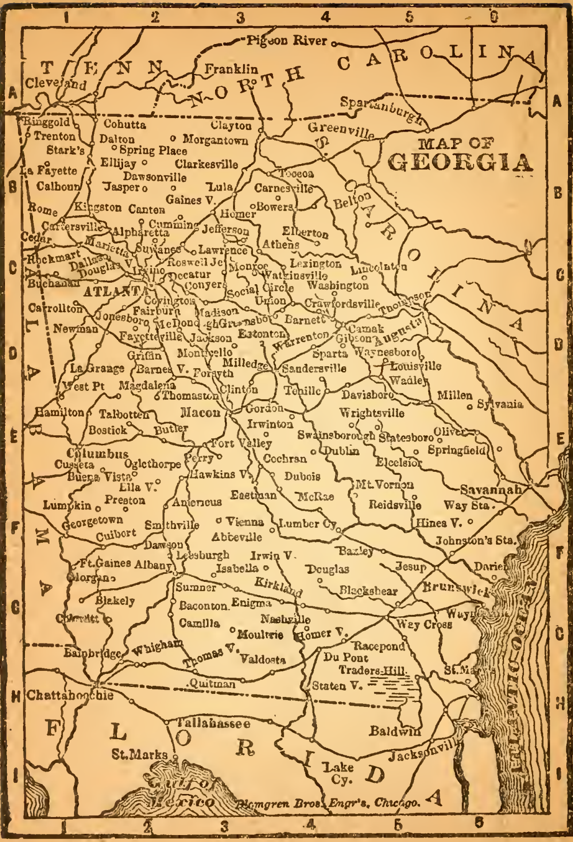
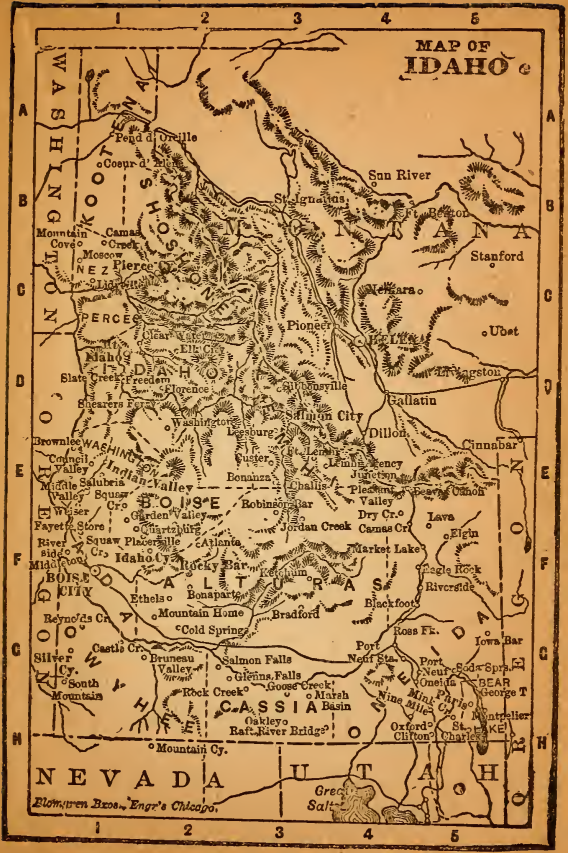
I
North-western Portion of FLORIDA
Cerro Gordo
Marianna
Chaffin
Milton
Pensacola
Chattahoochee
Euchee Anna
Vernon
Abes Spring
St. Andrew's Bay
Santa Rosa Island
St. Andrew's Isl.
Apalachicola
C. San Blas
Gulf of Mexico
Blomgren Bros., Engr's Chicago


MAP OF GEORGIA
1 2 3 4 5 6
A B C D E F G H I
TENN
NORTH CAROLINA
SO. CAROLINA
ALABAMA
FLORIDA
ATLANTIC OCEAN
Gulf of Mexico
Pigeon River
Franklin
Cleveland
Spartanburgh
Greenville
Ringgold
Trenton
Stark's
La Fayette
Calhoun
Rome
Cedar
Rockmart
Buchanan
Carrollton
Newman
La Grange
West Pt
Hamilton
Columbus
Cusseta
Buena Vista
Lumpkin
Georgetown
Cuibort
Ft. Gaines
Morgan
Blakely
Colquitt
Bainbridge
Chattahoochie
Cohutta
Dalton
Spring Place
Ellijay
Dawsonville
Jasper
Kingston
Canton
Cartersville
Alpharetta
Marietta
Dallas
Douglas V.
Suwanee
Irvine
Roswell Jc.
Decatur
ATLANTA
Fairburn
Jonesboro
McDonough
Fayetteville
Griffin
Barnes V.
Magdalena
Thomaston
Talbotten
Bostick
Butler
Oglethorpe
Ella V.
Preston
Smithville
Dawson
Albany
Sumner
Baconton
Camilla
Whigham
Thomas V.
Quitman
Tallahassee
St. Marks
Clayton
Morgantown
Clarkesville
Gaines V.
Cumming
Lula
Homer
Jefferson
Lawrence
Monroe
Conyers
Covington
Madison
Greensboro
Jackson
Monticello
Forsyth
Macon
Fort Valley
Perry
Hawkins V.
Americus
Vienna
Abbeville
Leesburgh
Isabella
Kirkland
Enigma
Moultrie
Valdosta
Toccoa
Carnesville
Bowers
Belton
Elberton
Athens
Lexington
Watkinsville
Social Circle
Union
Washington
Lincolnton
Crawfordsville
Thomson
Barnett
Eatonton
Warrenton
Camak
Gibson
Augusta
Sparta
Milledgeville
Sandersville
Clinton
Gordon
Irwinton
Tennille
Davisboro
Waynesboro
Louisville
Wadley
Millen
Sylvania
Wrightsville
Swainsborough
Statesboro
Oliver
Springfield
Dublin
Cochran
Dubois
Eastman
McRae
Excelsior
Mt. Vernon
Reidsville
Savannah
Way Sta.
Lumber Cy.
Hines V.
Johnston's Sta.
Irwin V.
Douglas
Baxley
Jesup
Darien
Brunswick
Blackshear
Nashville
Homer V.
Way Cross
Waynesville
Racepond
Du Pont
Traders-Hill
St. Marys
Staten V.
Baldwin
Jacksonville
Lake Cy.
Blomgren Bros. Engr's, Chicago.


MAP OF
IDAHO
WASHINGTON
OREGON
MONTANA
NEVADA
UTAH
WYOMING
KOOTENAI
SHOSHONE
NEZ PERCE
IDAHO
WASHINGTON
BOISE
ADA
ALTURAS
OWYHEE
CASSIA
ONEIDA
BEAR LAKE
Pend d' Oreille
Coeur d' Alene
Mountain Cove
Camas Creek
Moscow
Pierce City
Lewiston
Clear Water
Mt. Idaho
Elk City
Slate Creek
Freedom
Florence
Shearers Ferry
Washington
Brownlee
Council Valley
Indian Valley
Middle Valley
Salubria
Squaw Cr.
Weiser
Garden Valley
Fayette Store
Quartzburg
River Side
Squaw Cr.
Placerville
Atlanta
Middleton
Idaho Cy.
Rocky Bar
BOISE CITY
Ethels
Bonaparte
Ketchum
Reynolds Cr.
Mountain Home
Cold Springs
Bradford
Castle Cr.
Silver Cy.
Bruneau Valley
Salmon Falls
Glenns Falls
South Mountain
Rock Creek
Goose Creek
Marsh Basin
Oakley
Raft River Bridge
Mountain Cy.
Sun River
St. Ignatius
Ft. Benton
Stanford
Nevada
Ubet
Pioneer
HELENA
Livingston
Gibbonsville
Gallatin
Salmon City
Leesburg
Dillon
Ft. Lemhi
Custer
Lemhi Agency
Cinnabar
Bonanza
Junction
Challis
Pleasant Valley
Beaver Cañon
Robinson Bar
Dry Cr.
Jordan Creek
Camas Cr.
Lava
Elgin
Market Lake
Eagle Rock
Riverside
Blackfoot
Ross Fk.
Iowa Bar
Port Neuf Sta.
Port Neuf
Soda Sprs.
Oneida
Nine Mile
Mink Cr.
Paris
George T.
Montpelier
Oxford
Clifton
St. Charles
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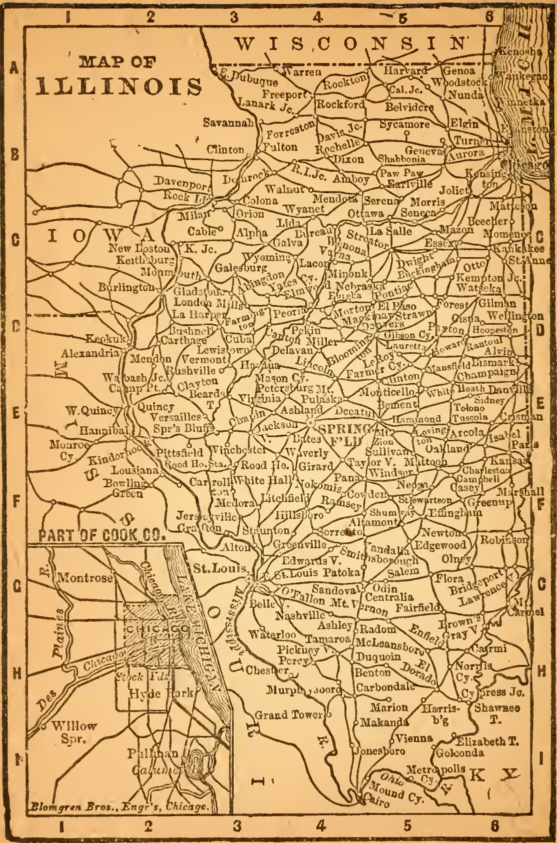
Blomgren Bros. Engr's Chicago.


MAP OF
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WISCONSIN
IOWA
MISSOURI
KY
LAKE MICHIGAN
Dubuque
Warren
Rockton
Harvard
Genoa
Kenosha
Waukegan
Woodstock
Cal. Jc.
Nunda
Freeport
Lanark Jc.
Rockford
Belvidere
Winnetka
Evanston
Savannah
Forreston
Davis Jc.
Sycamore
Elgin
Turner
Clinton
Fulton
Rochelle
Dixon
Geneva
Aurora
Shabbonia
Chicago
Davenport
Rock Id.
Denrock
R. I. Jc.
Amboy
Paw Paw
Earlville
Kensington
Joliet
Walnut
Mendota
Serena
Morris
Colona
Milan
Orion
Wyanet
Ottawa
Seneca
Matteson
Cable
Alpha
Lida
Bureau
Galva
Streator
La Salle
Mazon
Beecher
Momence
New Boston
K. Jc.
Keithsburg
Wenona
Varna
Essex
Kankakee
Wyoming
Galesburg
Lacon
Dwight
Otto
St. Anne
Monmouth
Abingdon
Yates Cy.
Minonk
Buckingham
Kempton Jc.
Burlington
Gladstone
Elmwood
Nebraska
Eureka
Pontiac
Watseka
London Mills
La Harpe
Farmington
Peoria
Morton
El Paso
Forest
Gilman
Mackinaw
Strawn
Onarga
Wellington
Keokuk
Bushnell
Carthage
Cuba
Canton
Pekin
Delavan
Miller
Deavers
Gibson Cy.
Paxton
Hoopeston
Alexandria
Lewistown
Bloomington
Lauretta
Howard
Rantoul
Alvin
Mendon
Vermont
Havana
Lincoln
Le Roy
Farmer Cy.
Mansfield
Bismark
Champaign
Wabash Jc.
Camp Pt.
Rushville
Clayton
Beardstown
Mason Cy.
Petersburg
Mt. Pulaski
Clinton
Monticello
White Heath
Danville
Sidney
W. Quincy
Quincy
Versailles
Virginia
Ashland
Decatur
Bement
Tolono
Tuscola
Crisman
Hannibal
Spr's Bluffs
Chapin
Jacksonville
SPRING F'LD
Hammond
Loving ton
Arcola
Isabel
Paris
Monroe Cy.
Kinderhook
Pittsfield
Winchester
Bates
Waverly
Mt. Zion
Sullivan
Oakland
Rood Ho. Sta.
Rood He.
Girard
Taylor V.
Mattoon
Kansas
Louisiana
Bowling Green
Carrollton
White Hall
Nokomis
Pana
Windsor
Charleston
Campbell
Casey
Neoga
Marshall
Medora
Litchfield
Cowden
Ramsey
Stewartson
Greenup
Jerseyville
Hillsboro
Shumway
Effingham
Grafton
Staunton
Altamont
Sorrento
Newton
Robinson
Alton
Greenville
Vandalia
Edgewood
Smithsborough
Olney
St. Louis
Edwards V.
St. Louis
Patoka
Salem
Flora
Bridgeport
Lawrence V.
Sandoval
Odin
Centralia
O'Fallon
Mt. Vernon
Fairfield
Mt. Carmel
Belle V.
Nashville
Ashley
Radom
Brown's
Enfield
Gray V.
Waterloo
Tamaroa
McLeansboro
Carmi
Pickney V.
Percy
Duquoin
El Dorado
Norris Cy.
Chester
Benton
Murphysboro
Carbondale
Cypress Jc.
Shawnee T.
Grand Tower
Marion
Harrisb'g
Makanda
Vienna
Elizabeth T.
Jonesboro
Golconda
Metropolis Cy.
Ohio R.
Mound Cy.
Cairo
Mississippi R.
PART OF COOK CO.
Montrose
Des Plaines R.
Chicago R.
CHICAGO
Stock Yds.
Hyde Park
Willow Spr.
Pullman
Calumet L.
Blomgren Bros., Engr's, Chicago.
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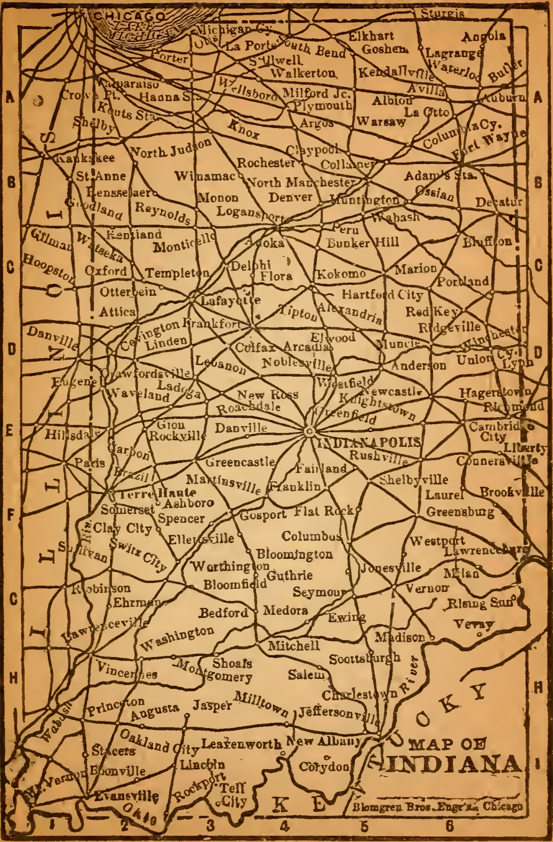
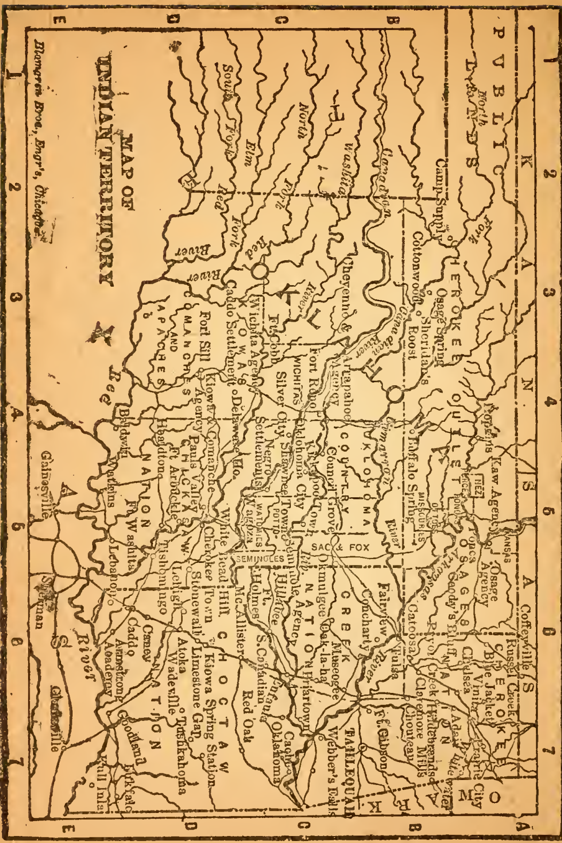
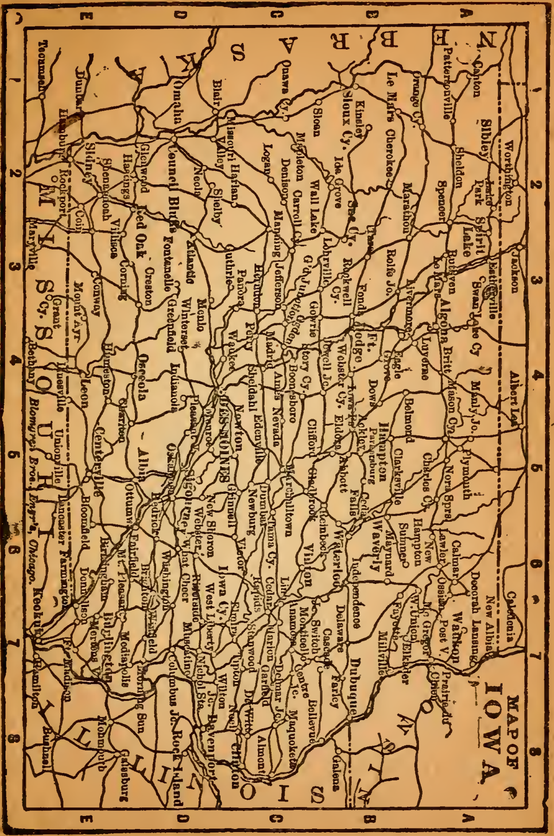


MAP OF INDIANA

Blomgren Bros. Engr's. Chicago


MAP OF INDIAN TERRITORY

Blomgren Bros., Engr's, Chicago.


MAP OF IOWA
Blomgren Bros. Engr's, Chicago.
NEBRASKA
SOUTH DAKOTA
MINNESOTA
WISCONSIN
ILLINOIS
MISSOURI
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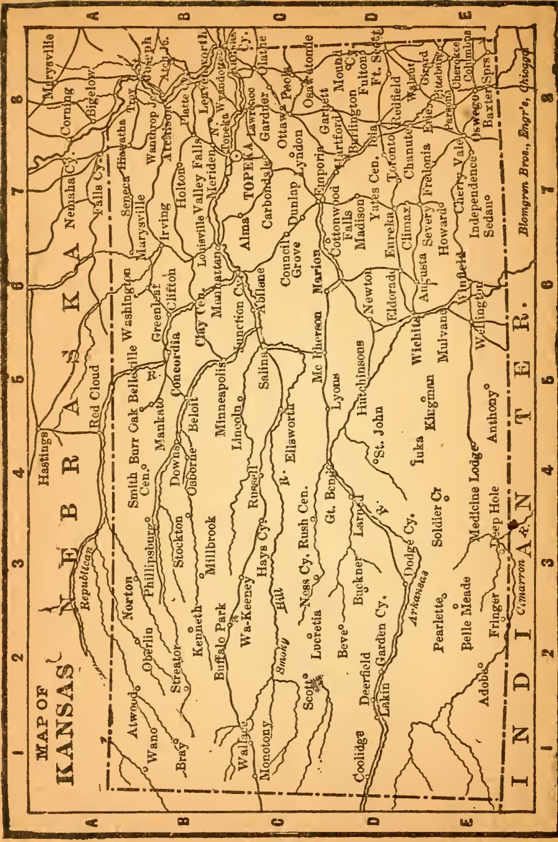
Canton
Pattersonville
Worthington
Sibley
Sheldon
Orange Cy.
Le Mars
Cherokee
Sioux Cy.
Kinsley
Sloan
Onawa Cy.
Blair
Omaha
Missouri Valley
Harlan
Logan
Denison
Mapleton
Ida Grove
Wall Lake
Carroll
Marathon
Spencer
Spirit Lake
Estherville
Jackson
Ruthven
Emmetsburg
Algona
Britt
Swan Lake
Albert Lea
Manly Jc.
Mason Cy.
Plymouth
Charles Cy.
Nora Springs
Calmar
Decorah
New Albin
Lansing
Waukon
Caledonia
Post V.
Ossian
Lawler
Prairie du Chien
McGregor
Elkader
Fayette
W. Union
Millville
Dubuque
Galena
Farley
Cascade
Delaware
Independence
Waterloo
Waverly
Maynard
Sumner
Hampton
Clarksville
Cedar Falls
Parkersburg
Aplington
Ackley
Iowa Falls
Eldora
Webster Cy.
Fort Dodge
Dows
Belmond
Eagle Grove
Livermore
Rolfe Jc.
Pocahontas
Rockwell Cy.
Lake Cy.
Lohrville
Sac Cy.
Gowrie
Jewell Jc.
Story Cy.
Boonesboro
Ames
Nevada
Jefferson
Grand Junction
Madrid
Perry
Panora
Guthrie
Waukee
Sheldahl
Des Moines
Newton
Grinnell
Marshalltown
Eldora
Tama Cy.
Toledo
Dunbar
Vinton
Cedar Rapids
Marion
Monticello
Anamosa
Centre Jc.
Maquoketa
Bellevue
Clinton
Delmar Jc.
De Witt
Davenport
Rock Island
Muscatine
Iowa Cy.
West Liberty
Wilton
Tipton
Stanwood
Victor
New Sharon
Oskaloosa
Sigourney
What Cheer
Washington
Wapello
Columbus Jc.
Mt. Pleasant
Burlington
Fairfield
Ottumwa
Albia
Centerville
Bloomfield
Keokuk
Farmington
Fort Madison
Galesburg
Monmouth
Bushnell
Hamilton
Lancaster
Unionville
Chariton
Osceola
Indianola
Winterset
Creston
Afton
Mount Ayr
Leon
Corning
Red Oak
Villisca
Shenandoah
Clarinda
Sidney
Hamburg
Rockport
Maryville
Bethany
Grant Cy.
Glenwood
Council Bluffs
Atlantic
Shelby
Neola
Hastings
Fontanelle
Greenfield
Menlo
Dunbar
Tecumseh
Conway
St. Joseph


MAP OF KANSAS
NEBRASKA
INDIAN TER.
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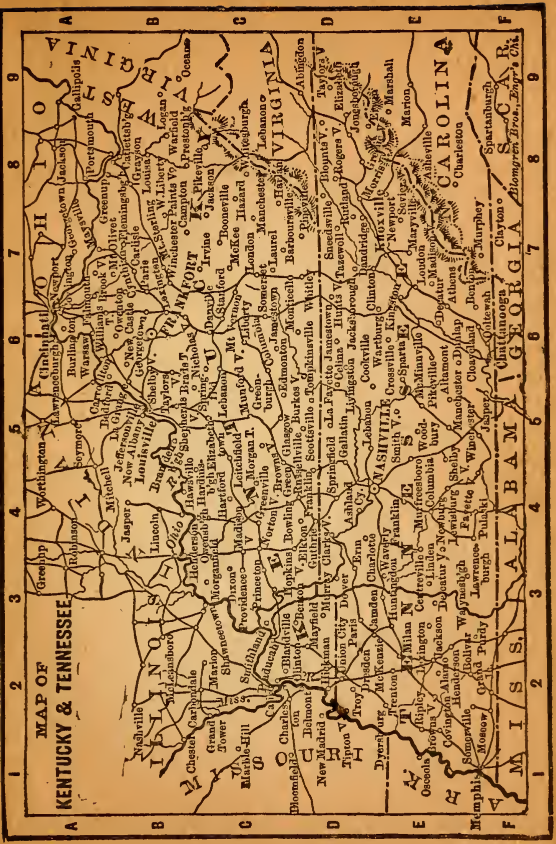
Marysville
Corning
Bigelow
St. Joseph
Atch. Jc.
Leavenworth
Kansas Cy.
Olathe
Wyandotte
Hiawatha
Troy
Wathena
Wanthrop Jc.
Atchison
Platte
Nemaha Cy.
Falls Cy.
Seneca
Marysville
Irving
Holton
Valley Falls
Louisville
Meriden
N. Topeka
TOPEKA
Lawrence
Gardner
Paola
Osawatomie
Ottawa
Lyndon
Carbondale
Alma
Dunlap
Council Grove
Emporia
Garnett
Mound Cy.
Hartford
Burlington
Fulton
Ft. Scott
Iola
Redfield
Cottonwood Falls
Madison
Yates Cen.
Toronto
Chanute
Walnut
Girard
Pittsburg
Eureka
Climax
Fredonia
Erie
Parsons
Cherokee
Columbus
Severy
Howard
Cherry Vale
Independence
Sedan
Oswego
Baxter Sprs.
Blomgren Bros., Engr's, Chicago
Washington
Greenleaf
Clifton
Clay Cen.
Manhattan
Junction Cy.
Abilene
Marion
Newton
Eldorado
Augusta
Winfield
Wichita
Mulvane
Wellington
Red Cloud
Belleville
R.
Concordia
Mankato
Beloit
Smith Cen.
Burr Oak
Minneapolis
Lincoln
Salina
Mc Pherson
Lyons
Hutchinsons
Kingman
Anthony
Hastings
Downs
Osborne
Ellsworth
Russell
St. John
Iuka
Medicine Lodge
Gt. Bend
Larned
Soldier Cr.
Deep Hole
Phillipsburg
Stockton
Millbrook
Hays Cy.
Rush Cen.
Ness Cy.
Dodge Cy.
Buckner
Arkansas
Republican
Norton
Oberlin
Kenneth
Wa-Keeney
Hill
Smoky
R.
Buffalo Park
Lucretia
Beve
Garden Cy.
Pearlette
Belle Meade
Fringer
Cimarron
Atwood
Streator
Scott
Deerfield
Lakin
Adobe
Wano
Bray
Wallace
Monotony
Coolidge


MAP OF
KENTUCKY & TENNESSEE
Blomgren Bros., Engr's Chi.
A
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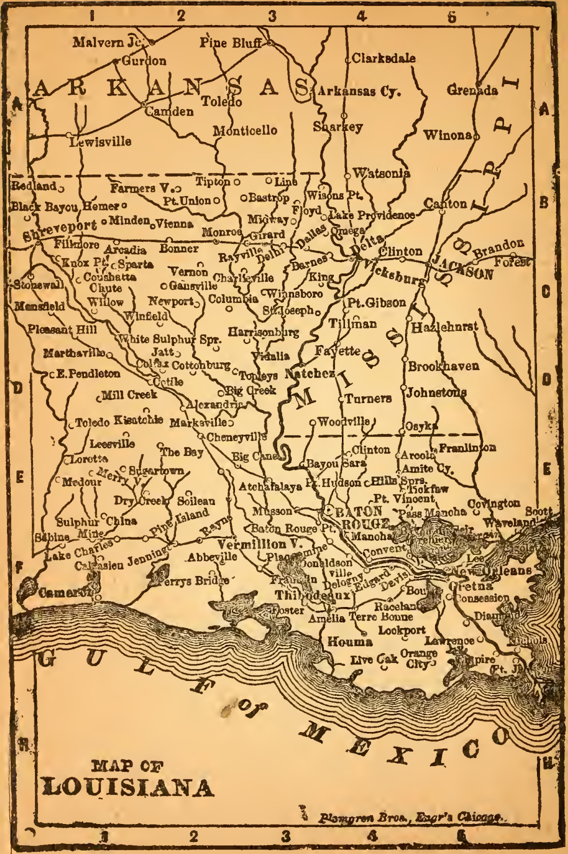
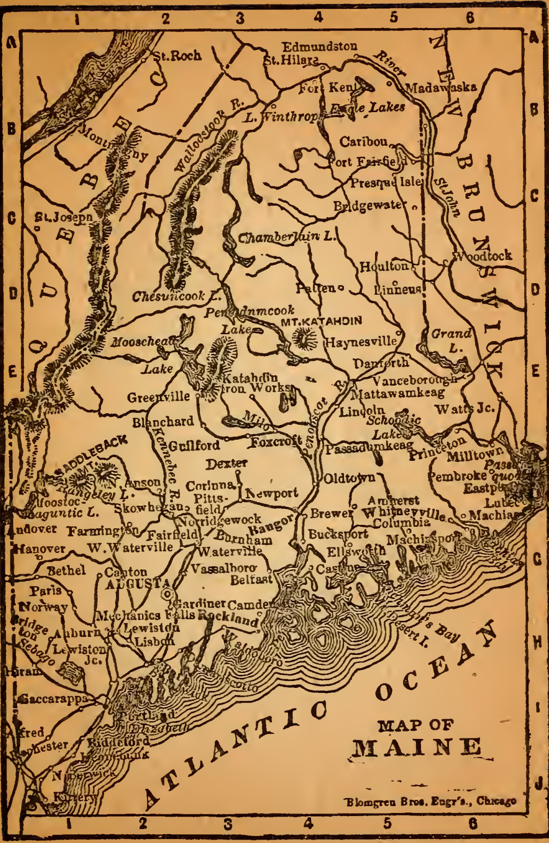
OHIO
INDIANA
ILLINOIS
MISSOURI
ARK.
MISS.
ALABAMA
GEORGIA
S. CAR.
N. CAROLINA
VIRGINIA
W. VIRGINIA
KENTUCKY
TENNESSEE
Ohio R.
FRANKFORT
NASHVILLE
Cincinnati
Louisville
Lexington
Covington
Newport
Maysville
Paris
Georgetown
Shelbyville
Bardstown
Elizabethtown
Bowling Green
Glasgow
Henderson
Owensboro
Paducah
Hopkinsville
Danville
Richmond
London
Somerset
Columbia
Hickman
Mayfield
Union City
Memphis
Jackson
Knoxville
Chattanooga
Murfreesboro
Columbia
Clarksville
Franklin
Lebanon
Gallatin
Sparta
Cookeville
Pulaski
Fayetteville
Shelbyville
Winchester
McMinnville
Athens
Cleveland
Greeneville
Jonesborough
Kingsport
Abingdon
Asheville
Marshall
Portsmouth
Gallipolis
Evansville
Jeffersonville
New Albany
Cairo
Carbondale
Charleston
Caruthersville
New Madrid
Tiptonville
Dyersburg
Covington
Somerville
Bolivar
Huntingdon
Waverly
Charlotte
Dover
Paris
Murray
Benton
Princeton
Morganfield
Marion
Smithland
Madisonville
Greenville
Russellville
Elkton
Scottsville
Tompkinsville
Burkesville
Albany
Monticello
Williamsburg
Barbourville
Manchester
Hazard
Whitesburg
Pikeville
Prestonsburg
Jackson
Booneville
Irvine
Campton
Mt. Sterling
Winchester
Flemingsburg
Greenup
Grayson
Louisa
Catlettsburg



MAP OF
LOUISIANA

Plamgren Bros. Engr's Chicago.


MAP OF
MAINE
Blomgren Bros. Engr's., Chicago
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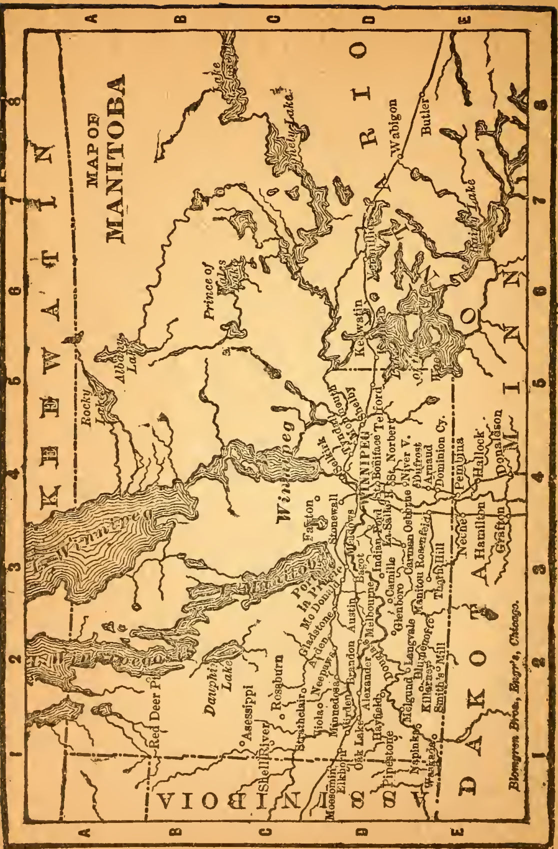
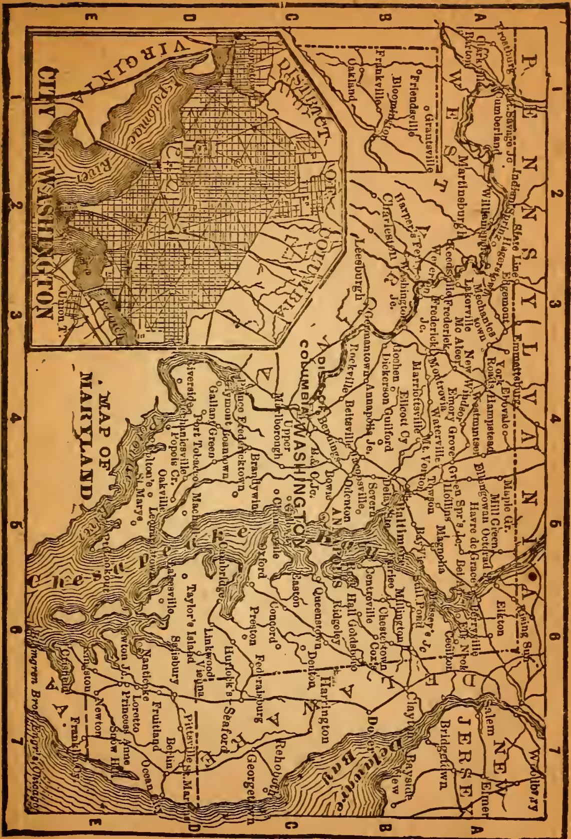
J
QUEBEC
NEW BRUNSWICK
ATLANTIC OCEAN
St. Roch
Edmundston
St. Hilaire
River
Madawaska
Fort Kent
Eagle Lakes
L. Winthrop
Wallodstook R.
Montmagny
Caribou
Fort Fairfield
Presque Isle
St. John
Bridgewater
St. Joseph
Chamberlain L.
Woodtock
Houlton
Patten
Linneus
Chesuncook L.
Penadnmcook Lake
MT. KATAHDIN
Haynesville
Moosehead Lake
Grand L.
Danforth
Katahdin Iron Works
Vanceborough
Mattawamkeag
Greenville
Lincoln
Watts Jc.
Schoodic Lake
Milo
Blanchard
Penobscot
Kennebec R.
Guilford
Foxcroft
Passadumkeag
Princeton
Milltown
SADDLEBACK MT.
Passamaquoddy
Dexter
Pembroke
Rangeley L.
Anson
Oldtown
Eastport
Corinna
Newport
Mooselocmaguntic L.
Pittsfield
Amherst
Lubec
Skowhegan
Brewer
Whitneyville
Machias
Norridgewock
Bangor
Columbia
Andover
Farmington
Fairfield
Burnham
Bucksport
Machiasport
Hanover
W. Waterville
Waterville
Ellsworth
Bethel
Canton
Vassalboro
Castine
AUGUSTA
Belfast
Paris
Norway
Gardiner
Camden
Mechanics Falls
Rockland
Bridgeton
Auburn
Lewiston
Sebago
Lewiston Jc.
Lisbon
Waldoboro
Wiscasset
Desert I.
Hiram
Saccarappa
Portland
Cape Elizabeth
Alfred
Rochester
Biddeford
Kennebunk
N. Berwick
Kittery



Blomgren Bros. Engr's, Chicago.


MAP OF MARYLAND
CITY OF WASHINGTON
DISTRICT OF COLUMBIA
PENNSYLVANIA
NEW JERSEY
DEL.
WEST VIRGINIA
VIRGINIA
VA.
Chesapeake Bay
Delaware Bay
Potomac River
State Line
WASHINGTON
ANNAPOLIS
Baltimore
Frostburg
Cumberland
Hagerstown
Frederick
Westminster
Ellicott Cy
Rockville
Upper Marlborough
Elkton
Havre de Grace
Bel Air
Chestertown
Centreville
Easton
Cambridge
Salisbury
Princess Anne
Snow Hill
Leonardtown
Port Tobacco
Oakland
Harper's Ferry
Leesburg
Dover
Georgetown
Rehoboth
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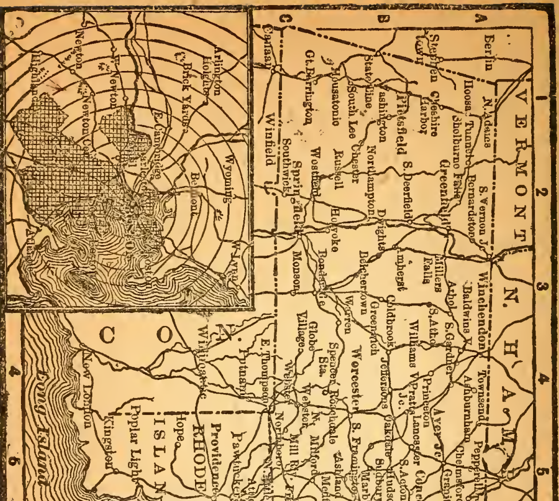
Rengren Bros. Engr's Chicago


MAP OF MASSACHUSETTS
VERMONT
N. HAMP.
CON.
RHODE ISLAND
Long Island Sound
Cape Cod Bay
MARTHAS VINEYARD
Nantucket Sound
Berlin
N. Adams
Hoosac Tunnel
Pittsfield
Washington
Housatonic
Gt. Barrington
Winfield
Greenfield
Northampton
Holyoke
Springfield
Westfield
Monson
Winchendon
Athol
Worcester
Webster
Putnam
Ayer Jc.
Concord
Lowell
Lawrence
Haverhill
Newburyport
Salem
Lynn
Chelsea
Boston
Franklin
Attleboro
Taunton
Providence
Pawtucket
Newport
Bedford
Plymouth
Barnstable
Hyannis
Harwich
Kingston
New London
Arlington Heights
Belmont
E. Cambridge
Wyoming
W. Lynn
Newton
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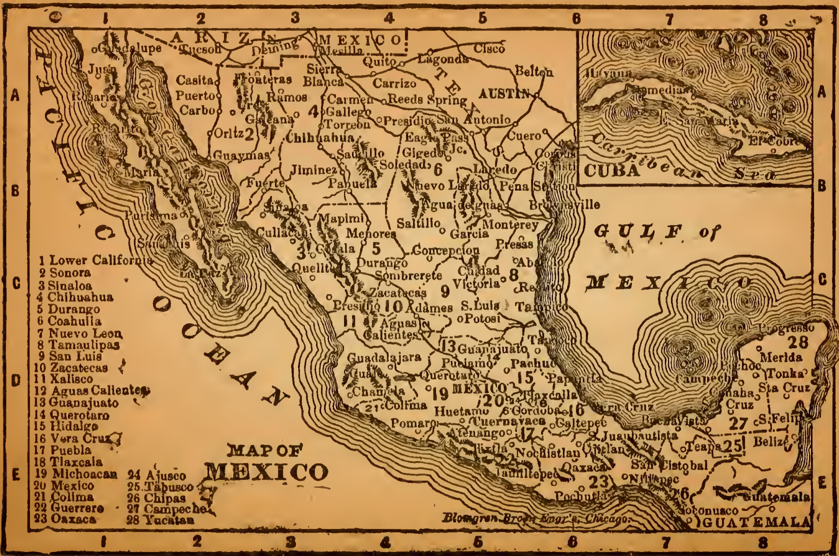
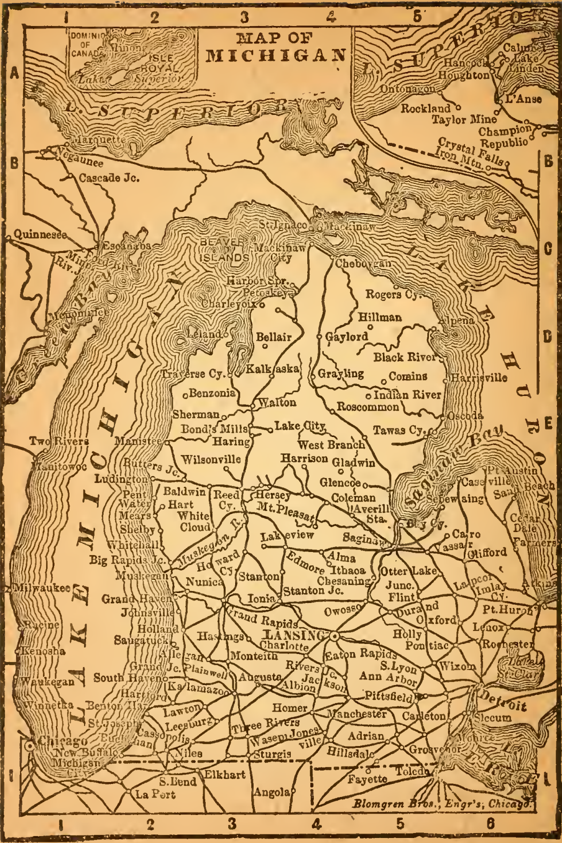

MAP OF
MEXICO
PACIFIC OCEAN
GULF of MEXICO
ARIZ.
MEXICO
TEX.
CUBA
Caribbean Sea
GUATEMALA
1 Lower California
2 Sonora
3 Sinaloa
4 Chihuahua
5 Durango
6 Coahuila
7 Nuevo Leon
8 Tamaulipas
9 San Luis
10 Zacatecas
11 Xalisco
12 Aguas Calientes
13 Guanajuato
14 Querotaro
15 Hidalgo
16 Vera Cruz
17 Puebla
18 Tlaxcala
19 Michoacan
20 Mexico
21 Colima
22 Guerrero
23 Oaxaca
24 Ajusco
25 Tabusco
26 Chipas
27 Campeche
28 Yucatan
Guadalupe
Tucson
Deming
Mesilla
Quito
Lagonda
Cisco
Belton
AUSTIN
San Antonio
Cuero
Corpus Christi
Laredo
Brownsville
Casita
Puerto
Carbo
Fronteras
Ramos
Sierra Blanca
Carrizo
Carmen
Reeds Spring
Gallego
Torreon
Presidio
Eagle Pass
Gigedo
Chihuahua
Guaymas
Ortiz
Jiminez
Soledad
Saltillo
Garcia
Monterey
Presas
Mapimi
Menores
Culiacan
Durango
Concepcion
Sombrerete
Ciudad Victoria
Zacatecas
Adames
S. Luis Potosi
Tampico
Aguas Calientes
Guanajuato
Guadalajara
Pachuca
Queretaro
MEXICO
Colima
Huetamo
Tlaxcalla
Cordoba
Cuernavaca
Vera Cruz
Merida
Progresso
Campeche
Sta Cruz
Belize
Guatemala
Soconusco
Pochutla
Oaxaca
San Cristobal
La Paz
Purisima
Habana
Remedios
Sta Maria
El Cobre
Blomgren Bros. Engr's. Chicago.


MAP OF MICHIGAN
DOMINION OF CANADA
ISLE ROYAL
Lake Superior
L. SUPERIOR
Marquette
Negaunee
Cascade Jc.
Quinnesec
Escanaba
Ford River
Minn. Riv.
Menominee
Green Bay
Ontonagon
Hancock
Houghton
Calumet
Lake Linden
L'Anse
Rockland
Taylor Mine
Champion
Republic
Crystal Falls
Iron Mtn.
St. Ignace
Mackinaw
Mackinaw City
BEAVER ISLANDS
Cheboygan
Harbor Spr.
Petoskey
Charlevoix
Rogers Cy.
Hillman
Alpena
Leland
Bellair
Gaylord
Black River
Traverse Cy.
Kalkaska
Grayling
Comins
Harrisville
Benzonia
Indian River
Walton
Roscommon
Sherman
Bond's Mills
Lake City
Oscoda
Tawas Cy.
Haring
West Branch
Two Rivers
Manistee
Manitowoc
Butters Jc.
Wilsonville
Harrison
Gladwin
Ludington
Glencoe
Pent Water
Baldwin
Hart
Reed Cy.
Hersey
Coleman
Mears
White Cloud
Mt. Pleasant
Averill Sta.
Shelby
Muskegon R.
Lakeview
Saginaw
Bay Cy.
Whitehall
Big Rapids Jc.
Howard Cy.
Edmore
Alma
Ithaca
Chesaning
Muskegon
Nunica
Stanton
Stanton Jc.
Milwaukee
Grand Haven
Ionia
Owosso
Otter Lake
Junc.
Flint
Durand
Oxford
Johnsville
Grand Rapids
LANSING
Holland
Hastings
Charlotte
Holly
Pontiac
Saugatuck
Monteith
Eaton Rapids
S. Lyon
Wixom
Allegan
Grand Jc.
Plainwell
Augusta
Rivers Jc.
Jackson
Ann Arbor
Racine
Kenosha
South Haven
Kalamazoo
Albion
Pittsfield
Waukegan
Hartford
Benton Har.
Lawton
Homer
Manchester
Carleton
Winnetka
St. Joseph
Leesburg
Three Rivers
Cassopolis
Jonesville
Adrian
Chicago
Buchanan
New Buffalo
Michigan City
Niles
Wasepi
Sturgis
Hillsdale
Grosvenor
Monroe
Detroit
Slocum
Elkhart
S. Bend
La Port
Angola
Fayette
Toledo
L. ERIE
LAKE MICHIGAN
LAKE HURON
Saginaw Bay
Pt. Austin
Caseville
Sebewaing
Sand Beach
Cairo
Vassar
Clifford
Cedar Dale
Farmers
Lapeer
Imlay Cy.
Atkins
Pt. Huron
Lenox
Rochester
Lake St. Clair
Blomgren Bros., Engr's, Chicago.
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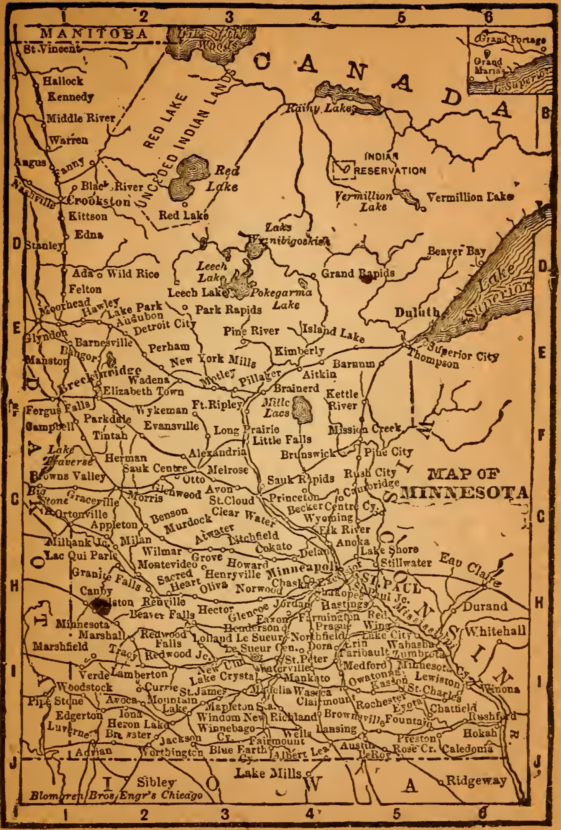
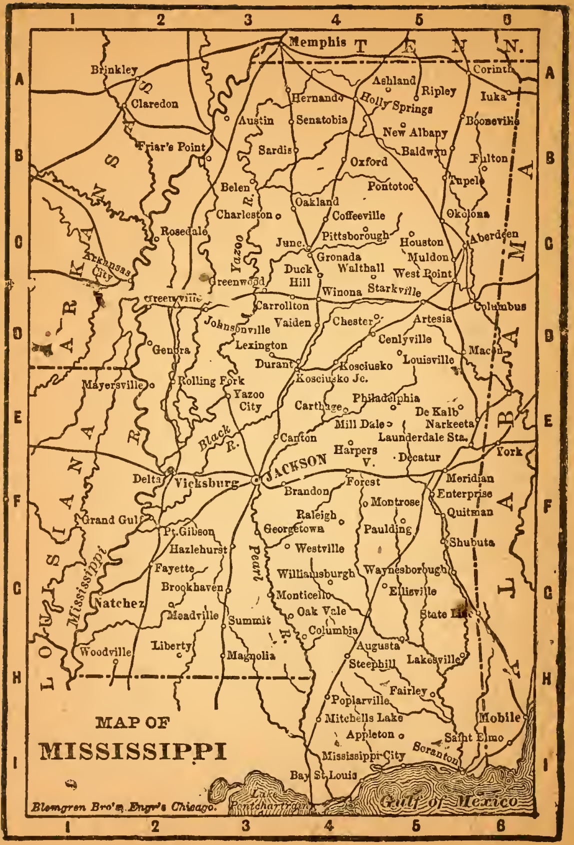


MAP OF MINNESOTA

Blomgren Bros, Engr's Chicago


MAP OF
MISSISSIPPI
Blomgren Bro's, Engr's Chicago.
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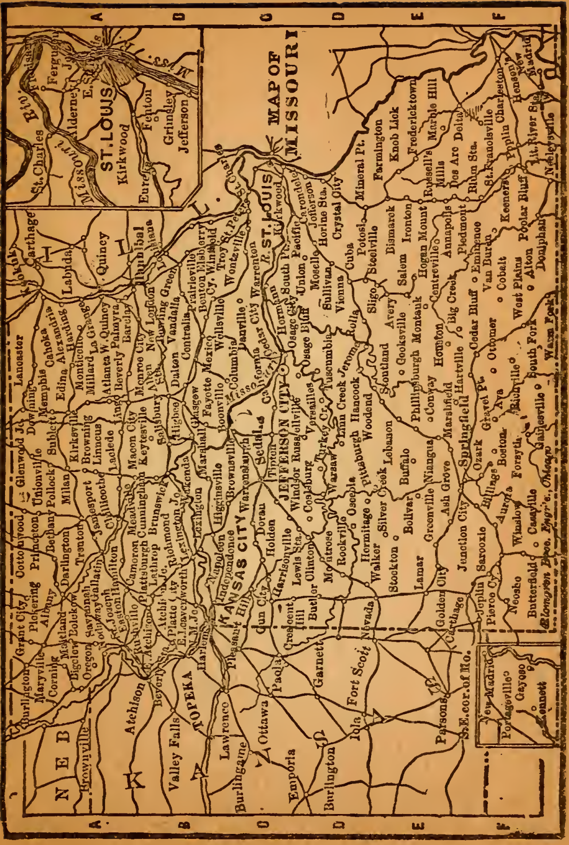
H
I
TENN.
ARKANSAS
LOUISIANA
ALABAMA
Memphis
Brinkley
Claredon
Friar's Point
Austin
Hernando
Senatobia
Sardis
Holly Springs
Ashland
Ripley
Corinth
Iuka
Booneville
New Albany
Baldwyn
Fulton
Oxford
Pontotoc
Tupelo
Belen
Charleston
Oakland
Coffeeville
Okolona
Rosedale
Yazoo R.
Junc.
Pittsborough
Houston
Aberdeen
Gronada
Muldon
Arkansas City
Duck Hill
Walthall
West Point
Greenwood
Winona
Starkville
Greenville
Carrollton
Columbus
Johnsonville
Vaiden
Chester
Artesia
Cenlyville
Genora
Lexington
Durant
Kosciusko
Louisville
Macon
Mayersville
Rolling Fork
Kosciusko Jc.
Yazoo City
Philadelphia
Carthage
De Kalb
Mill Dale
Narkeeta
Black R.
Canton
Lauderdale Sta.
Harpers V.
Decatur
York
Delta
Vicksburg
JACKSON
Forest
Meridian
Brandon
Enterprise
Montrose
Grand Gulf
Raleigh
Quitman
Pt. Gibson
Georgetown
Paulding
Hazlehurst
Westville
Shubuta
Pearl R.
Fayette
Williamsburgh
Waynesborough
Mississippi
Brookhaven
Ellisville
Natchez
Monticello
Oak Vale
State Line
Meadville
Summit
Columbia
Woodville
Liberty
Augusta
Magnolia
Steephill
Lakesville
Fairley
Poplarville
Mitchells Lake
Mobile
Appleton
Saint Elmo
Scranton
Mississippi City
Bay St. Louis
Lake Pontchartrain
Gulf of Mexico


MAP OF MISSOURI
ST. LOUIS
KANSAS CITY
JEFFERSON CITY
Springfield
Hannibal
St. Joseph
Sedalia
Joplin
Carthage
Nevada
Rolla
Kirksville
Columbia
St. Charles
Kirkwood
Ferguson
E. St. Louis
Fenton
Grinsley
Jefferson
Eureka
Mississippi R.
Missouri R.
TOPEKA
Atchison
Lawrence
Fort Scott
Parsons
S.E. cor. of Mo.
Quincy
Keokuk
Carthage
New Madrid
Portageville
Gayoso
Kennett
Blomgren Bros. Engr's., Chicago
NEB
KAN
ILL
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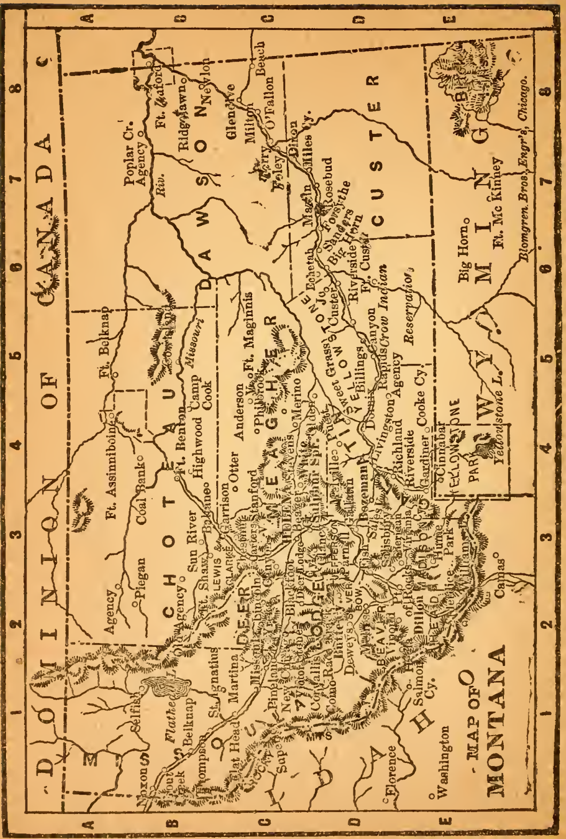
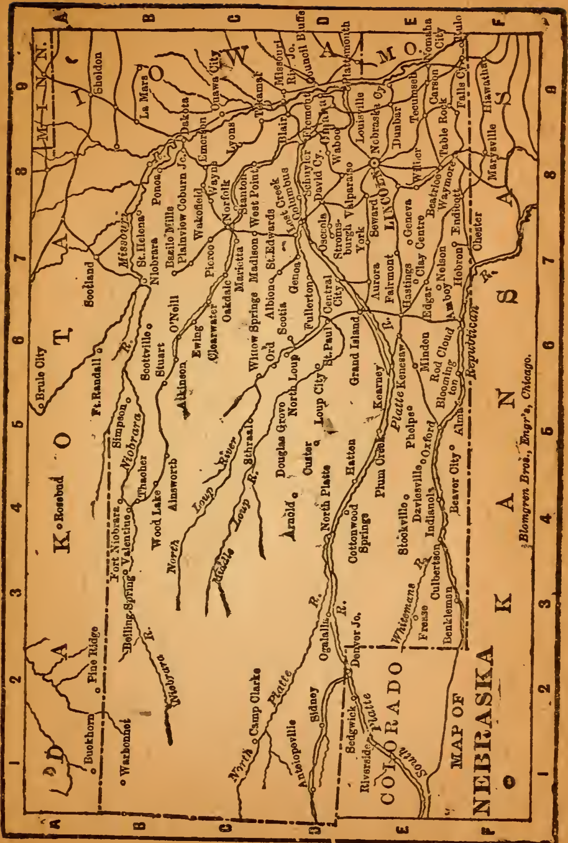
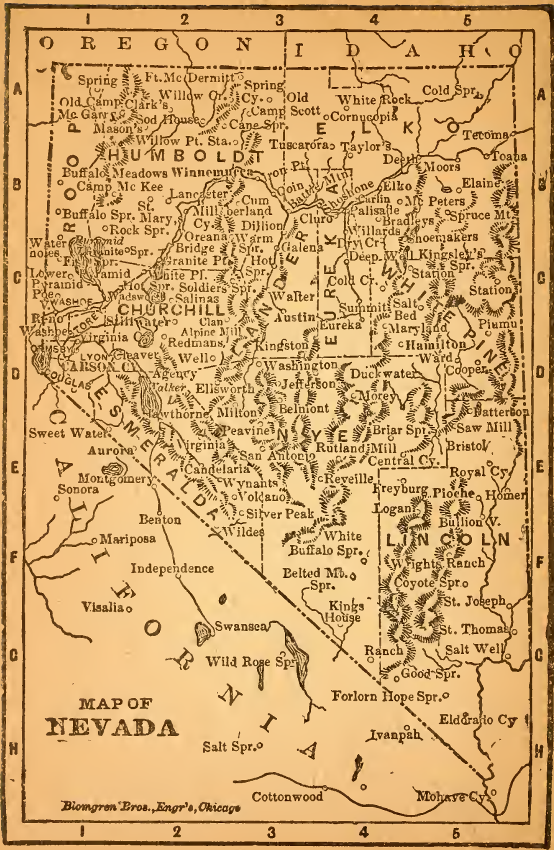


MAP OF MONTANA



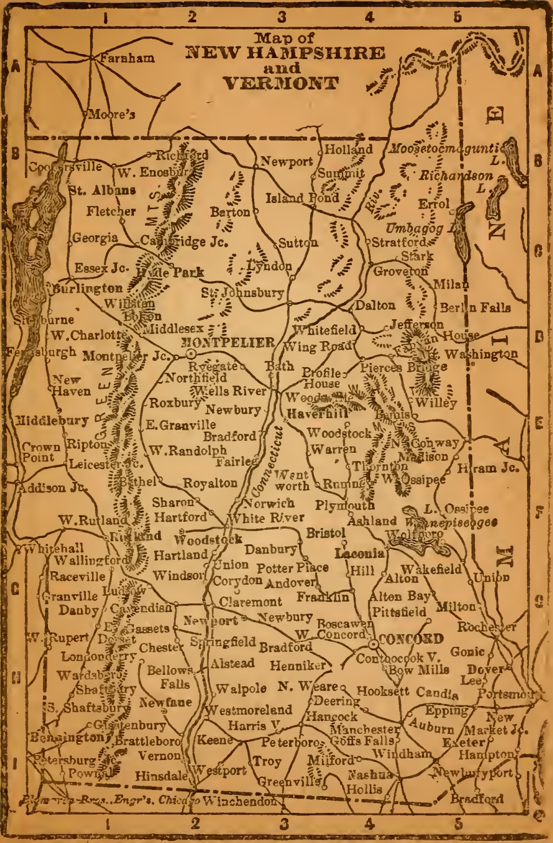
MAP OF NEBRASKA

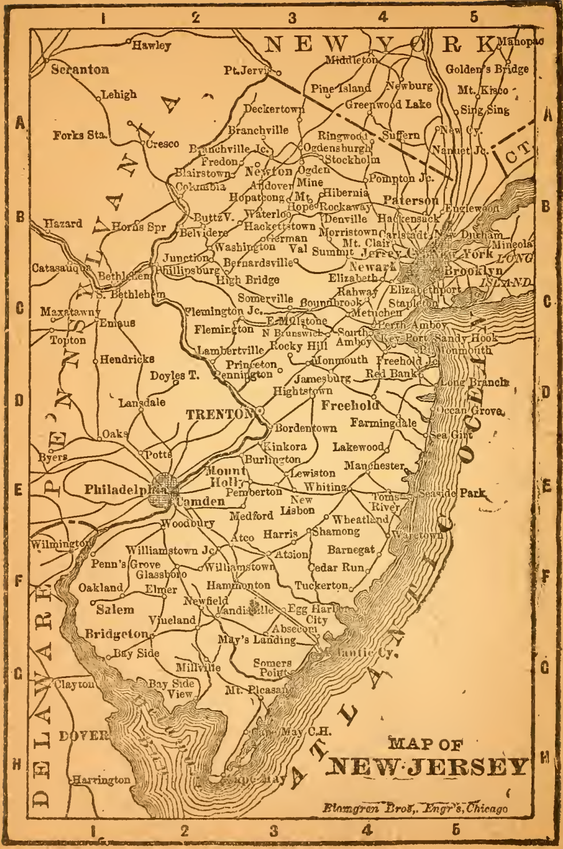
Blomgren Bros., Engr's, Chicago.



MAP OF NEVADA

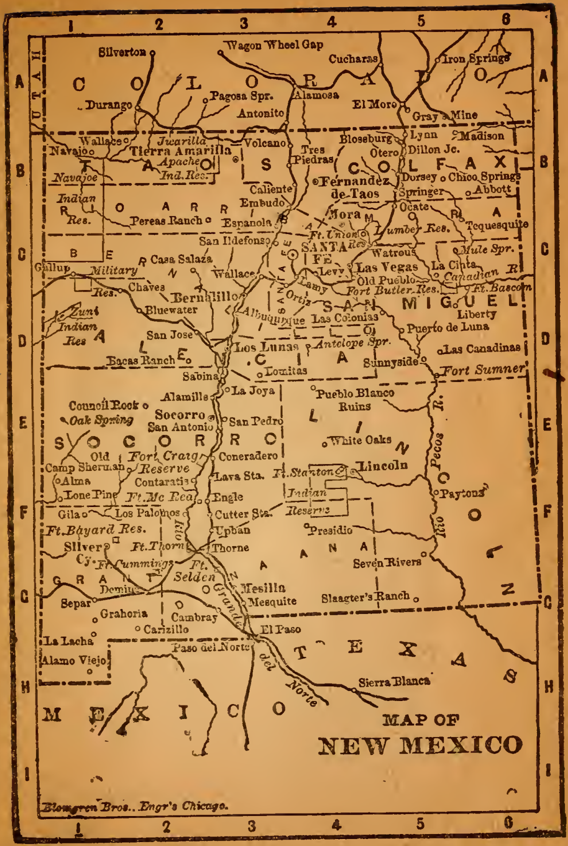
Blomgren Bros., Engr's, Chicago


Map of
NEW HAMPSHIRE
and
VERMONT
1 2 3 4 5
A B C D E F G H I
Farnham
Moore's
Richford
Coopersville
W. Enosburg
St. Albans
Fletcher
MTS.
Georgia
Cambridge Jc.
Essex Jc.
Hyde Park
Burlington
Williston
Bolton
Middlesex
Shelburne
W. Charlotte
Ferrisburgh
Montpelier Jc.
MONTPELIER
New Haven
Middlebury
Crown Point
Ripton
Leicester Jc.
Addison Jc.
Bethel
W. Rutland
Rutland
Whitehall
Wallingford
Raceville
Granville
Danby
Ludlow
Cavendish
E. Dorset
W. Rupert
Dorset
Londonderry
Wardsboro
Shaftsbury
S. Shaftsbury
Glastenbury
Bennington
Petersburg Jc.
Pownal
Newport
Holland
Summit
Island Pond
Barton
Sutton
Lyndon
St. Johnsbury
Ryegate
Northfield
Wells River
Roxbury
Newbury
E. Granville
Bradford
W. Randolph
Fairlee
Royalton
Sharon
Hartford
Woodstock
Hartland
Windsor
Union
Corydon
Claremont
Newport
Newbury
Gassets
Chester
Springfield
Bradford
Bellows Falls
Alstead
Walpole
Newfane
Westmoreland
Brattleboro
Vernon
Hinsdale
Westport
Keene
Harris V.
Troy
Greenville
Winchendon
Peterboro
Mooselocmaguntic L.
Richardson L.
Errol
Umbagog L.
Stratford
Stark
Groveton
Milan
Berlin Falls
Dalton
Jefferson
Fabyan House
Mt. Washington
Whitefield
Wing Road
Bath
Profile House
Pierces Bridge
Willey
Woodsville
Haverhill
Bemis
Woodstock
Conway
Madison
Warren
Thornton
Hiram Jc.
Wentworth
Rumney
W. Ossipee
Connecticut
Norwich
White River
Plymouth
L. Ossipee
Ashland
Winnepiseogee
Wolfboro
Bristol
Danbury
Laconia
Potter Place
Hill
Andover
Alton
Wakefield
Union
Franklin
Alton Bay
Milton
Pittsfield
Boscawen
W. Concord
CONCORD
Rochester
Henniker
Contoocook V.
Gonic
Bow Mills
Dover
Lee
N. Weare
Hooksett
Candia
Portsmouth
Deering
Hancock
Epping
New Market Jc.
Auburn
Manchester
Goffs Falls
Exeter
Windham
Hampton
Milford
Nashua
Newburyport
Hollis
Bradford
MAINE
Blomgren Bros., Engr's, Chicago



MAP OF
NEW JERSEY

Blomgren Bros., Engr's, Chicago


MAP OF
NEW MEXICO
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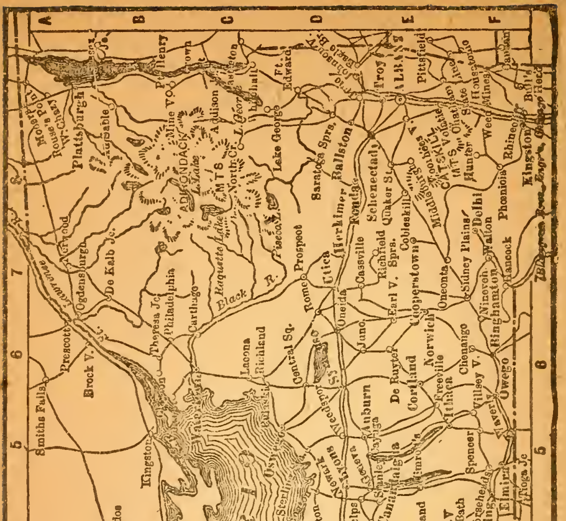
H
I
UTAH
COLORADO
Silverton
Wagon Wheel Gap
Cucharas
Iron Springs
Durango
Pagosa Spr.
Alamosa
El Moro
Antonito
Gray Mine
Wallace
Jicarilla
Volcano
Blossburg
Lynn
Madison
Navajo
Tierra Amarilla
Tres
Piedras
Otero
Dillon Jc.
Apache
Ind. Res.
Fernandez
de Taos
Dorsey
Chico Springs
COLFAX
Navajoe
Indian
Res.
Caliente
Springer
Abbott
Embudo
Ocate
RIO ARRIBA
Pereas Ranch
Espanola
Mora
Tequesquite
Ft. Union
Mumber Res.
San Ildefonso
SANTA FE
Watrous
Mule Spr.
Casa Salaza
Levy
Las Vegas
La Cinta
Gallup
Military
Res.
Wallace
Lamy
Old Pueblo
Canadian R.
Chaves
Ortiz
Fort Butler Res.
Ft. Bascom
Bernalillo
SAN MIGUEL
Zuni
Indian
Res.
Bluewater
Albuquerque
Las Colonias
Liberty
San Jose
Puerto de Luna
Los Lunas
Antelope Spr.
Las Canadinas
VALENCIA
Bacas Ranch
Sunnyside
Sabinal
Lomitas
Fort Sumner
La Joya
Alamillo
Pueblo Blanco
Ruins
Council Rock
Oak Spring
Socorro
San Pedro
San Antonio
LINCOLN
White Oaks
SOCORRO
Old Fort Craig
Coneradero
Camp Sherman
Reserve
Lava Sta.
Ft. Stanton
Lincoln
Alma
Contaratis
Indian
Reserve
Paytons
Lone Pine
Ft. Mc Rea
Engle
Pecos R.
Gila
Los Palomos
Cutter Sta.
Ft. Bayard Res.
Upban
Presidio
DONA ANA
Silver
Cy.
Ft. Thorn
Thorne
Ft. Cummings
Seven Rivers
Ft. Selden
EDDY
Deming
Mesilla
GRANT
Mesquite
Slaagter's Ranch
Separ
Grahoria
Cambray
Carizillo
El Paso
La Lacha
Paso del Norte
TEXAS
Alamo Viejo
Rio Grande del Norte
Sierra Blanca
MEXICO
Blomgren Bros.. Engr's Chicago.


Map of
NEW YORK
Allendale
Beeton
Caledon
Brampton
Streetsville
Milton
Burlington
Hamilton
Toronto
Bridgenorth
Pt. Perry
Stouffville
Petersborough
Mill Br.
Pt. Hope
Cobourg
Belleville
Madoc
Kingston
Smiths Falls
Brock V.
Prescott
Ogdensburg
De Kalb Jc.
Theresa Jc.
Philadelphia
Carthage
Lacona
Richland
Central Sq.
Oswego
Sterling
Newark
Lyons
Weedsport
Rome
Oneida
Utica
Prospect
Black R.
Raquette Lake
ADIRONDACK MTS
North Cr.
L. George
Lake George
Ft. Edward
Whitehall
Plattsburgh
Rouse's Pt.
W. Chazy
Saratoga Sprs.
Ballston
Herkimer
Fonda
Schenectady
Troy
ALBANY
Pittsfield
Quaker St.
Cobleskill
Richfield Sprs.
Earl V.
Cooperstown
Oneonta
Sidney Plains
Delhi
Walton
Hancock
Phoenicia
Hunter
Rhinecliff
Kingston
Weed Mines
CATSKILL MTS
Middleburgh
Binghamton
Nineveh
Norwich
Chenango
Owego
Waverly
Elmira
Tioga Jc.
Spencer
Ithaca
Freeville
Cortland
De Ruyter
Auburn
Cayuga
Geneva
Canandaigua
Horseheads
Corning
Bath
Hornellsville
Wayland
Avon
Mt. Morris
Nunda
Swain
Canisteo
Friendship
Wellsville
Bolivar
Westfield
Cuba
Olean
Salamanca
Freedom
Arcade
Machias
Castile
Attica
Akron
Tonawanda
Buffalo
Suspension Br.
Rochester
Brighton
Phelps
Pavilion Cen.
Springville
Chaffee
West
Dayton
Jamestown
Corry
Cornplanter
Pt. Colborne
Welland
Merritton
Deans
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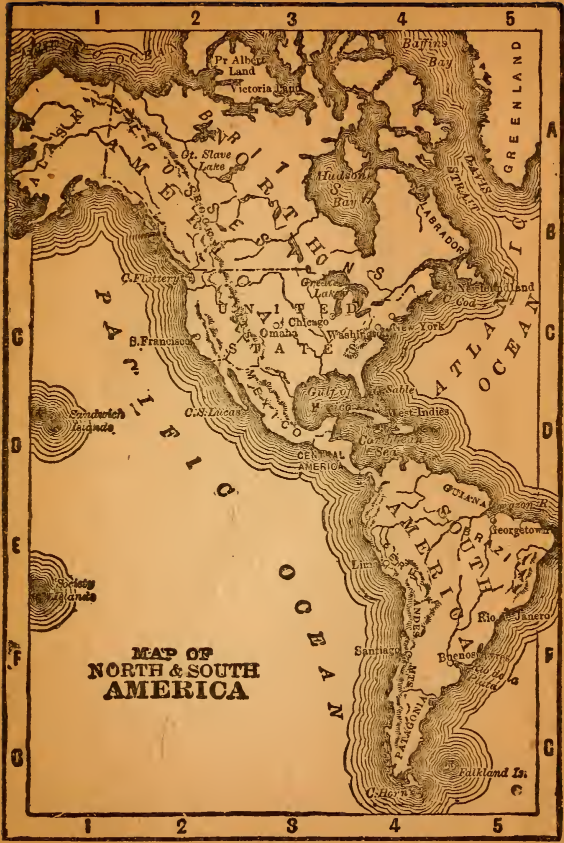
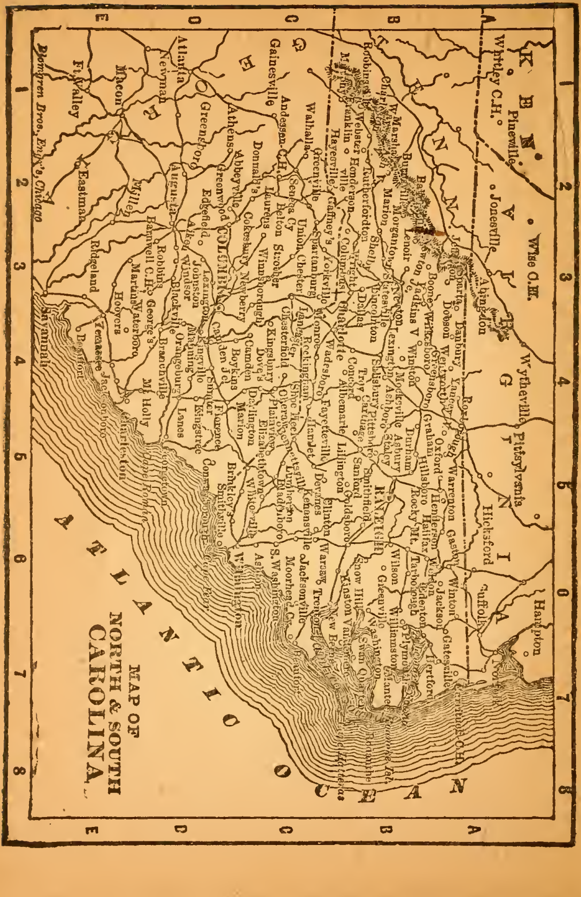


MAP OF
NORTH & SOUTH
AMERICA


MAP OF
NORTH & SOUTH
CAROLINA
ATLANTIC OCEAN
KENTUCKY
VIRGINIA
TENN.
GEORGIA
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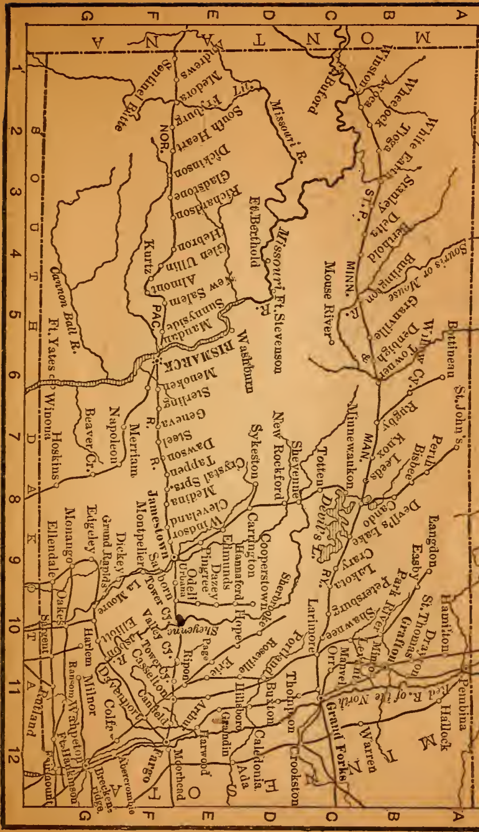
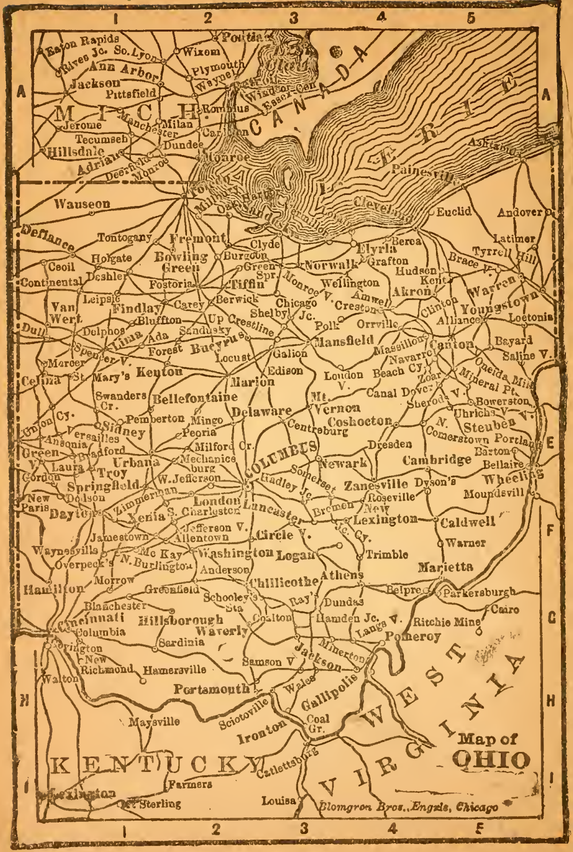
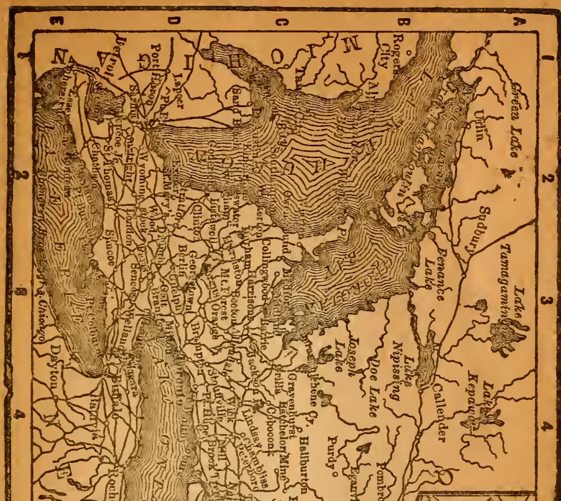
Pineville
Whitley C.H.
Jonesville
Wise C.H.
Abingdon
Wytheville
Pittsylvania
Hicksford
Suffolk
Hampton
Norfolk
Gatesville
Hertford
Winton
Jackson
Weldon
Gaston
Warrenton
Henderson
Halifax
Oxford
Roxboro
Hillsboro
Durham
Rocky Mt.
Tarboro
Wilson
Williamston
Plymouth
Greenville
Washington
RALEIGH
Smithfield
Goldsboro
Kinston
Snow Hill
New Berne
Swan Quarter
Manteo
Beaufort
Morehead City
Jacksonville
Trenton
Warsaw
Clinton
Kenansville
S. Washington
Wilmington
Smithville
Whiteville
Elizabethtown
Lumberton
Fayetteville
Dunn
Lillington
Sanford
Pittsboro
Ashboro
Albemarle
Troy
Carthage
Rockingham
Wadesboro
Monroe
Charlotte
Concord
Salisbury
Mocksville
Lexington
Winston
Greensboro
Graham
Yanceyville
Danbury
Dobson
Wentworth
Jefferson
Wilkesboro
Boone
Statesville
Newton
Lincolnton
Dallas
Shelby
Rutherfordton
Morganton
Marion
Lenoir
Asheville
Burnsville
Bakersville
Marshall
Webster
Franklin
Hendersonville
Hayesville
Murphy
Robbinsville
Charleston
Columbus
Brevard
Greenville
Spartanburg
Gaffney's
Yorkville
Union
Chester
Lancaster
Chesterfield
Cheraw
Bennettsville
Darlington
Florence
Marion
Conway
Georgetown
Kingstree
Sumter
Camden
Bishopville
Kingsbury
Winnsboro
Newberry
Laurens
Abbeville
Anderson C.H.
Walhalla
Pickens
Seneca
Greenwood
Edgefield
Aiken
COLUMBIA
Lexington
Orangeburg
Branchville
Barnwell C.H.
Blackville
Walterboro
Beaufort
Charleston
Cape Romain
Savannah
Augusta
Athens
Atlanta
Gainesville
Macon
Milledgeville
Eastman
Ft. Valley
Newnan
Greensboro
Blomgren Bros. Eng's, Chicago


MAP OF
NORTH DAKOTA
CANADA
MONTANA
SOUTH DAKOTA
MINNESOTA
A B C D E F G
1 2 3 4 5 6 7 8 9 10 11 12
Winston
Ayoca
Wheelock
Tioga
White Earth
Stanley
Delta
Berthold
Burlington
Souris or Mouse R.
Granville
Denbigh
Towner
Willow Cy.
Bottineau
St. John's
Rugby
Knox
Leeds
Perth
Bisbee
Cando
Devil's Lake
Langdon
Easby
Hamilton
Pembina
Hallock
St. Thomas
Drayton
Grafton
Park River
Minto
Petersburg
Lakota
Crary
Shawnee
Lankin
Manvel
Orr
Larimore
Red R. of the North
Grand Forks
Warren
Crookston
Thompson
Portland
Buxton
Caledonia
Ada
Hillsboro
Grandin
Harwood
Moorhead
Fargo
Casselton
Canfield
Arthur
Erie
Ripon
Page
Roseville
Mayville
Cooperstown
Sherbrooke
Hope
Hannaford
Carrington
Edmunds
Dazey
Pingree
Odell
Urbana
Sheyenne R.
Sanborn
Tower Cy.
Valley Cy.
Jamestown
Montpelier
La Moure
Dickey
Grand Rapids
Edgeley
Monango
Ellendale
Oakes
Sargent
Harlem
Milnor
Ransom
Wahpeton
Ft. Abercrombie
Colfax
Davenport
Elliott
Lisbon
Breckenridge
Ft. Hankinson
Fairmount
Rutland
Windsor
Cleveland
Medina
Crystal Sprs.
Tappen
Dawson
Steel
Geneva
Sterling
Menoken
BISMARCK
Mandan
Sunnyside
New Salem
Almont
Glen Ullin
Hebron
Richardson
Gladstone
Dickinson
South Heart
Fryburg
Medora
Andrews
Sentinel Butte
Little Missouri R.
Missouri R.
Buford
Ft. Berthold
Ft. Stevenson
Washburn
Mouse River
Minnewaukon
Totten
Devil's L.
Sheyenne
New Rockford
Sykeston
MINN. ST. P. & MAN. RY.
NOR. PAC. R. R.
Kurtz
Merriam
Napoleon
Beaver Cr.
Hoskins
Winona
Ft. Yates
Cannon Ball R.



Map of OHIO

Blomgren Bros., Engrs, Chicago


MAP OF
ONTARIO
North Western
Part of
ONTARIO
Lake Nipigon
Ignace
English River
Pt. Arthur
Ft. William
Sault de Ste. Marie
Sudbury
Green Lake
Sudbury
Lake Tamagaming
Lake Kepawa
Lake Nipissing
Callender
Pemance Lake
Doe Lake
Joseph Lake
Purdy
Egan ville
Pembroke
Renfrew
Arnprior
Ottawa
Montreal
Morrisburg
Smith's Falls
Perth
Brockville
Kingston
Belleville
Peterboro
Lindsay
Haliburton
Emily Mine
Gravenhurst
Orillia
Barrie
Collingwood
Owen Sound
Orangeville
Brampton
Toronto
Guelph
Berlin
Galt
Brantford
Hamilton
Niagara
Buffalo
Welland
Simcoe
St. Thomas
London
Woodstock
Stratford
Clinton
Goderich
Wingham
Kincardine
Southampton
Walkerton
Sarnia
Port Huron
Chatham
Windsor
Detroit
Wyoming
Strathroy
Lapeer
Alpena
Rogers City
Dayton
Rochester
Oswego
Syracuse
Watertown
St. Lawrence River
Lake Ontario
Lake Erie
Lake Huron
Georgian Bay
Michigan
Ohio
New York
Quebec
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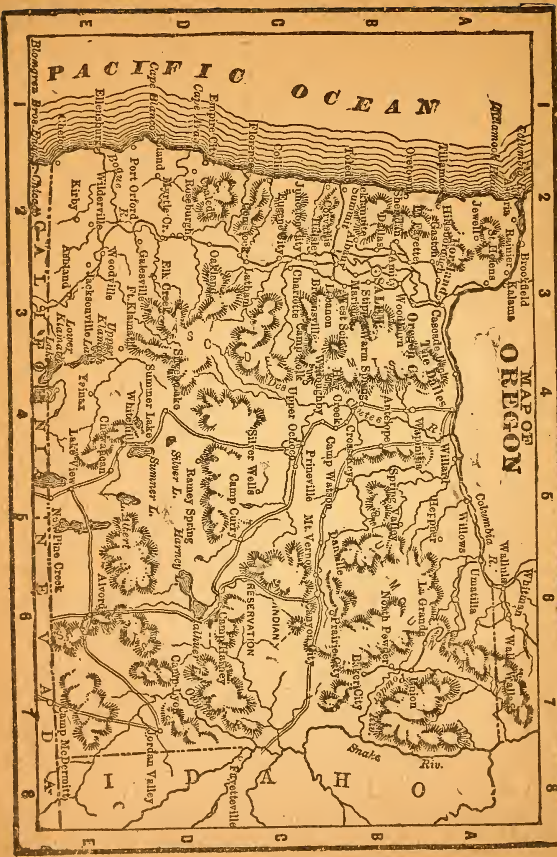
MAP OF OREGON
PACIFIC OCEAN
Blomgren Bros. Eng. Chicago
CALIFORNIA
NEVADA
IDAHO
Columbia R.
Astoria
Tillamook
Rainier
Kalama
Brookfield
St. Helens
Jewell
Hillsboro
Forest Grove
Gaston
Lafayette
Dallas
Amity
Sheridan
Oretown
Toledo
Summit
Albany
Corvallis
Salem
Stipp
Marion
West Scio
Woodburn
Oregon City
Cascade Locks
The Dalles
Willard
Wapinitia
Antelope
Warm Springs
Cross Keys
Camp Watson
Prineville
Upper Ochoco
Lebanon
Brownsville
Charlotte
Camp Polk
Junction City
Eugene City
Latham
Florence
Oakland
Roseburgh
Coos Bay
Empire City
Cape Arago
Cape Blanco
Myrtle Cr.
Port Orford
Rogue R.
Ellensburg
Galesville
Elk Creek
Ft. Klamath
Woodville
Jacksonville
Ashland
Kirby
Wilderville
Upper Klamath Lake
Lower Klamath Lake
Yeinax
Lake View
Summer Lake
Silver Lake
Silver Wells
Camp Currey
Raney Spring
Harney
Albert L.
Alvord
Pine Creek
Camp McDermitt
Jordan Valley
Fayetteville
Camp Lyon
Camp Harney
Malheur
INDIAN RESERVATION
Canyon City
Prairie City
Mt. Vernon
Dayville
Spring Valley
Heppner
Willows
Columbia R.
Umatilla
Wallula
Whitman
Walla Walla
La Grande
North Powder
Baker City
Union
Snake Riv.
Diamond Peak
Lake
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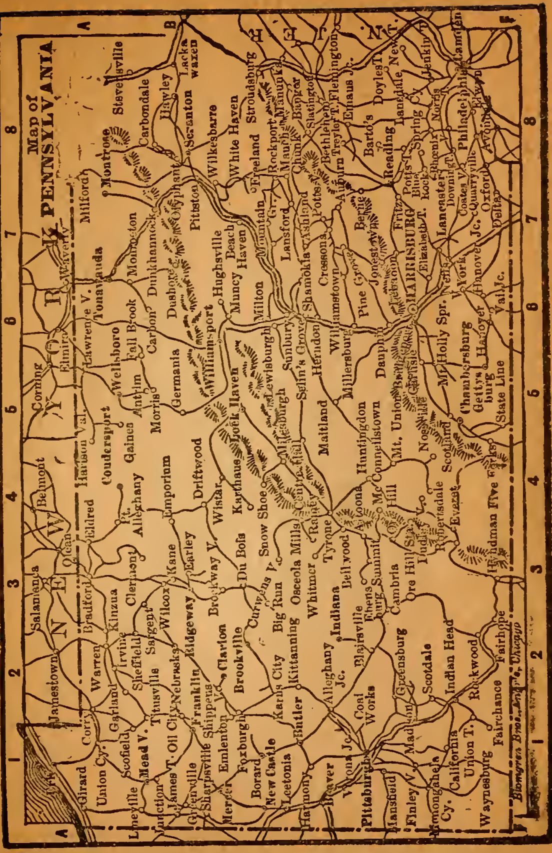
Map of
PENNSYLVANIA
N. Y.
N. J.
Erie
Girard
Union Cy.
Corry
Jamestown
Salamanca
Olean
Bradford
Warren
Kinzua
Eldred
Belmont
Harrison Val.
Coudersport
Corning
Elmira
Waverly
Tonawanda
Lawrence V.
Wellsboro
Gaines
Antrim
Morris
Fall Brook
Germania
Williamsport
Lock Haven
Lewisburg
Sunbury
Milton
Muncy
Hughsville
Monroeton
Dushore
Towanda
Milford
Montrose
Stevensville
Carbondale
Hawley
Scranton
Lackawaxen
Wilkesbarre
Pittston
Olyphant
White Haven
Stroudsburg
Freeland
Rockport
Mauch Chunk
Bangor
Slatington
Bethlehem
Easton
Flemington
Emmaus Jc.
Doylestown
Reading
Lansdale
Norris
Spring Cy.
Phœnix V.
Downing T.
Philadelphia
Camden
Jenkintown
Quarryville
Oxford
Delta
Avondale
Lancaster
Columbia
York
Hanover
Gettysburg
Chambersburg
Carlisle
Mt. Holly Spr.
HARRISBURG
Elizabeth T.
Lebanon
Jonestown
Pine Grove
Pottsville
Auburn
Ashland
Shamokin
Cressons
Williamstown
Millersburg
Herndon
Selin's Grove
Dauphin
Lansford
Mountain
Meadville
Scofield
Garland
Irvine
Sheffield
Titusville
Oil City
Franklin
Sargent
Clermont
Kane
Wilcox
Ridgeway
Earley
Emporium
Driftwood
Wistar
Karthaus
Brockway V.
Du Bois
Clarion
Brookville
Curwensville
Snow Shoe
Milesburgh
Bellefonte
Osceola Mills
Tyrone
Maitland
Huntingdon
Mt. Union
McConnellstown
Altoona
Bell wood
Hollidaysburg
Whitmer
Big Run
Kittanning
Karns City
Butler
Emlenton
Shippens V.
Foxburgh
Greenville
Sharpsville
Mercer
New Castle
Leetonia
Borard
Harmony
Beaver
Pittsburgh
Allegheny Jc.
Indiana
Blairsville
Ebensburg
Summit
Cambria
Cresson
Ore Hill
Greensburg
Scotdale
Indian Head
Rockwood
Fairhope
Fairchance
Union T.
California
Monongahela Cy.
Finley V.
Mansfield
Waynesburg
Coal Works
Madison
Everett
Robertsdale
Dudley
Hyndman
Five Forks
State Line
Vail Jc.
Scotland
Noesville
Blue Rock
Costea V.
Lineville
Junction
James T.
Mead V.
Blomgren Bros., Engr's, Chicago
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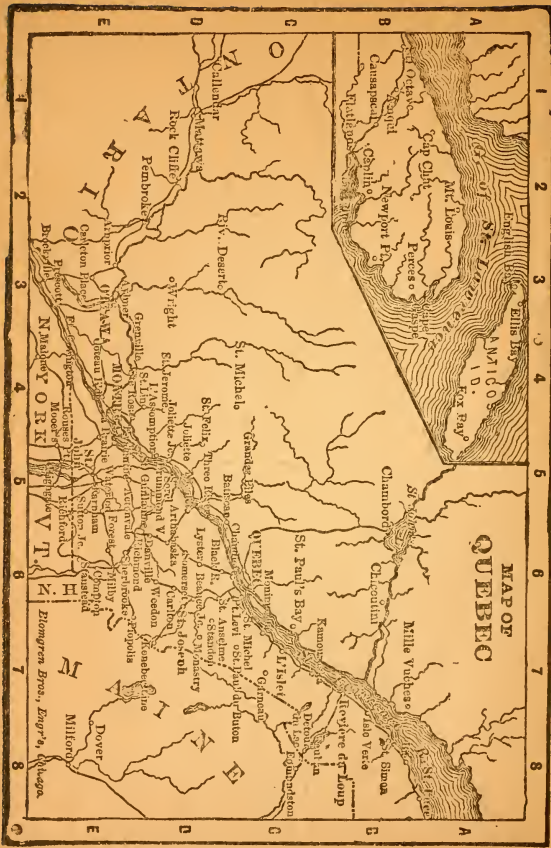
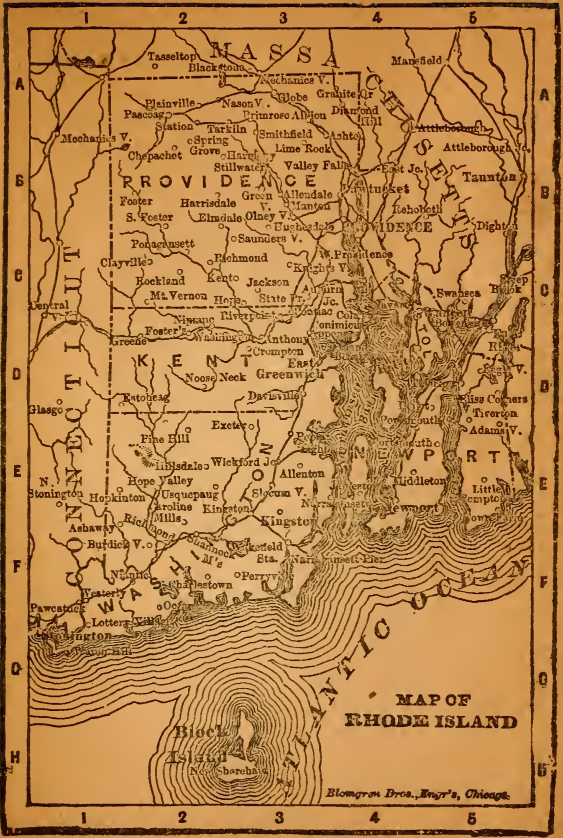
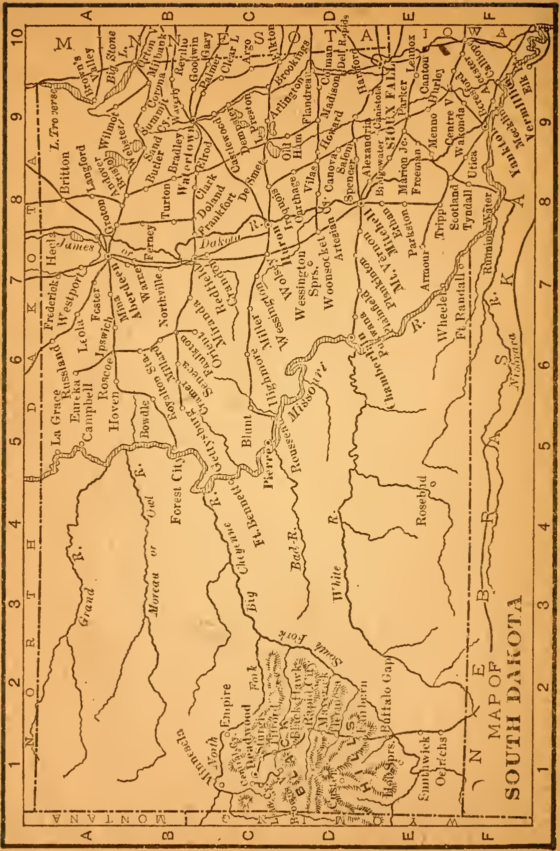


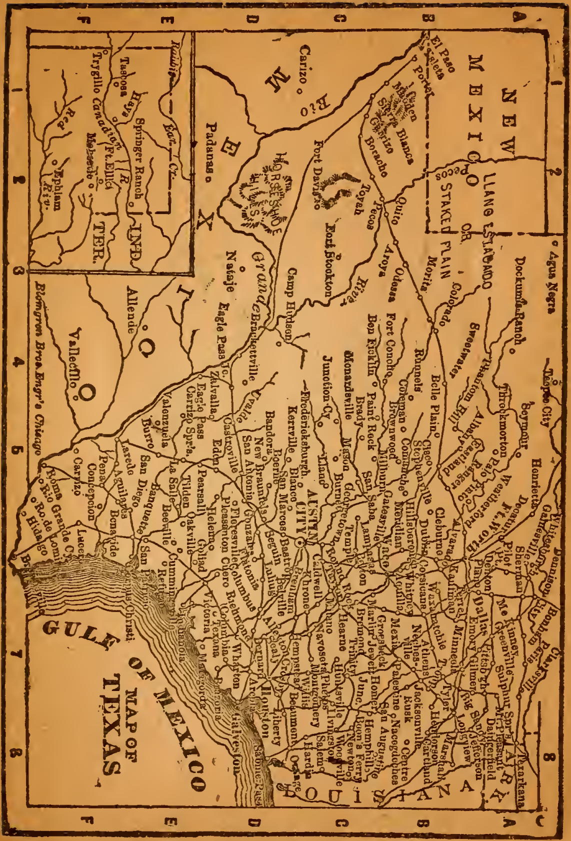
Elomgren Bros., Engr's, Chicago



MAP OF RHODE ISLAND

Blomgren Bros., Engr's, Chicago.


MAP OF
SOUTH DAKOTA
NORTH DAKOTA
MONTANA
WYOMING
NEBRASKA
MINN.
IOWA
Missouri
James
Dakota R.
Cheyenne R.
Big Cheyenne
Grand R.
Moreau or Owl R.
Bad R.
White R.
Niobrara
South Fork
North Fork
Big Stone L.
L. Traverse
Brown's Valley
Pierre
Huron
Aberdeen
Watertown
Mitchell
Yankton
SIOUX FALLS
Deadwood
Rapid City
Hot Sprs.
Custer
Sturgis
Lead City
Buffalo Gap
Oelrichs
Smithwick
Empire
Ft. Bennett
Ft. Randall
Forest City
Gettysburg
Blunt
Highmore
Miller
Redfield
Brookings
Madison
Flandreau
Canton
Vermillion
Elk Pt.
Chamberlain
Plankinton
Armour
Parkston
Scotland
Tyndall
Rosebud
Britton
Groton
Milbank
Ipswich
Bowdle
Hoven
La Grace
Eureka
Frederick
Westport
Webster
Clark
De Smet
Wessington
Woonsocket
Alexandria
Canova
Salem
Howard
Parker
Lennox
Elrod
Castlewood
Arlington
Dell Rapids
Colman
Iroquois
Doland
Frankfort
Ferney
Northville
Mina
Leola
Roscoe
Campbell
Russland
Hecla
Langford
Andover
Bristol
Wilmot
Clear L
Gary
Palmer
Goodwin
Revillo
Ortonville
Corona
Summit
Bradley
Turton
Carthage
Vilas
Spencer
Artesian
Ethan
Freeman
Menno
Marion Jc.
Wakonda
Utica
Centre V.
Beresford
Hurley
Alcester
Running Water
Wheeler
Tripp
Mt. Vernon
Plankinton
Harrisburg
Hartford
Canistota
Bridgewater
Orient
Miranda
Faulkton
Seneca
Cramer
Millard
Rousseau
Crandon
Wolsey
Oldham
Preston
Dempster
Argo
Volga
Elkton


MAP OF TEXAS
GULF OF MEXICO
NEW MEXICO
MEXICO
LOUISIANA
ARK.
IND. TER.
LLANO ESTACADO OR STAKED PLAIN
HORSESHOE HILLS
Rio Grande
Pecos
Colorado
El Paso
Fort Davis
Fort Stockton
Camp Hudson
Eagle Pass
Laredo
San Antonio
AUSTIN CITY
Houston
Galveston
Dallas
Ft. Worth
Sherman
Denison
Texarkana
Tyler
Waco
Corpus Christi
Brownsville
Victoria
Brenham
Palestine
Marshall
Jefferson
Corsicana
Weatherford
Fredericksburgh
Kerrville
New Braunfels
San Marcos
Seguin
Gonzales
Goliad
Beeville
Uvalde
Brackettville
Sweetwater
Colorado
Belle Plain
Cisco
Stephenville
Comanche
Brownwood
San Saba
Lampasas
Belton
Temple
Georgetown
Round Rock
Bastrop
Lockhart
Columbus
Richmond
Beaumont
Orange
Sabine Pass
Nacogdoches
Crockett
Huntsville
Navasota
Bryan
Calvert
Hearne
Hillsboro
Cleburne
Henrietta
Gainesville
Decatur
Paris
Bonham
Clarksville
Greenville
Sulphur Spr's
Mt. Pleasant
Tascosa
Mobeetie
Ft. Elliott
Blomgren Bros. Engr's Chicago
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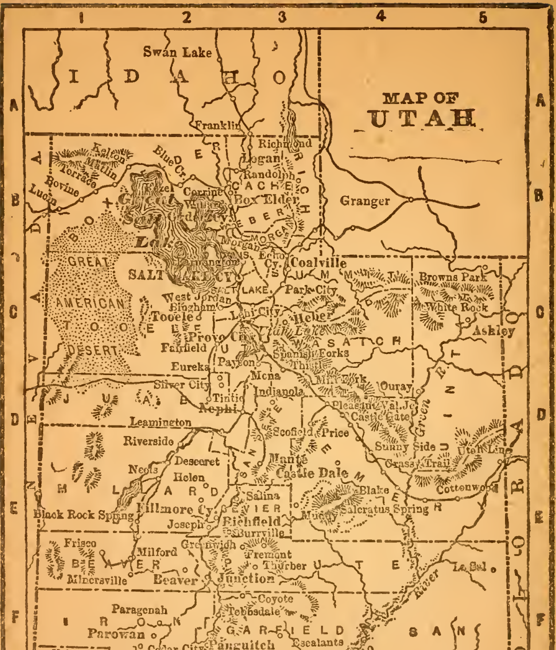
MAP OF
UTAH
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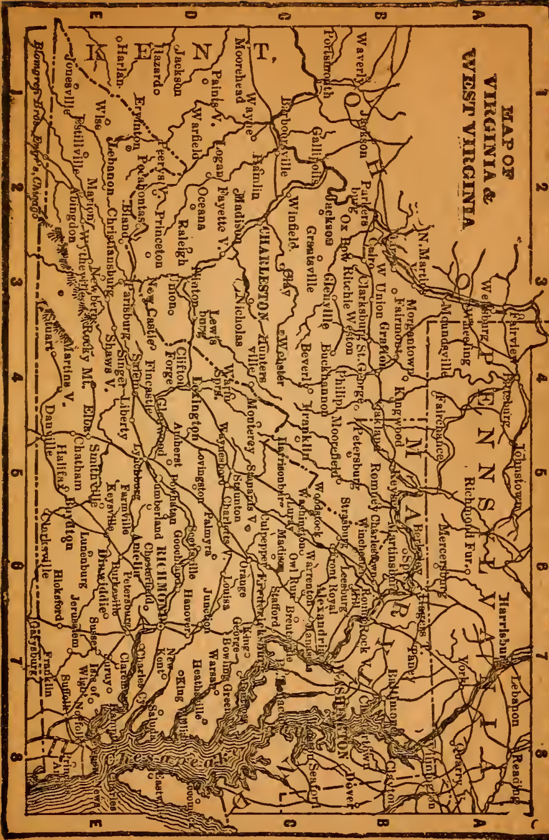
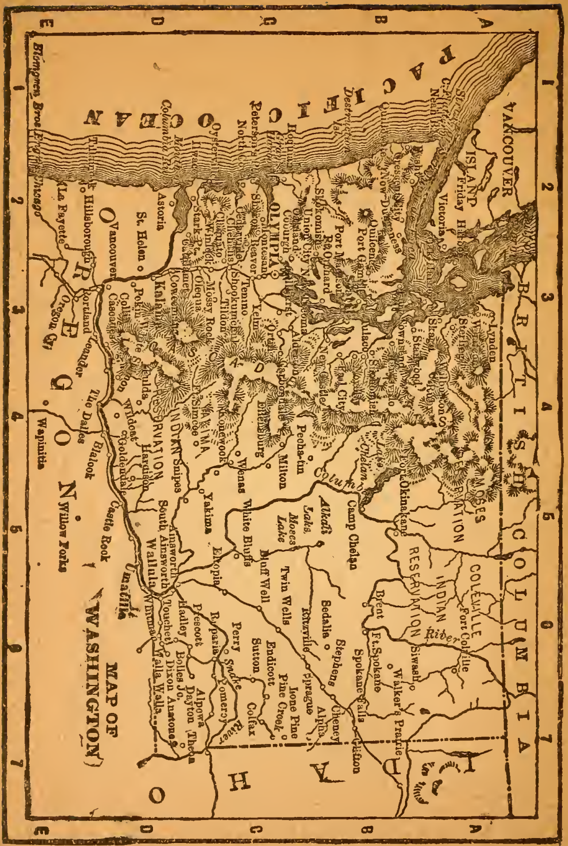
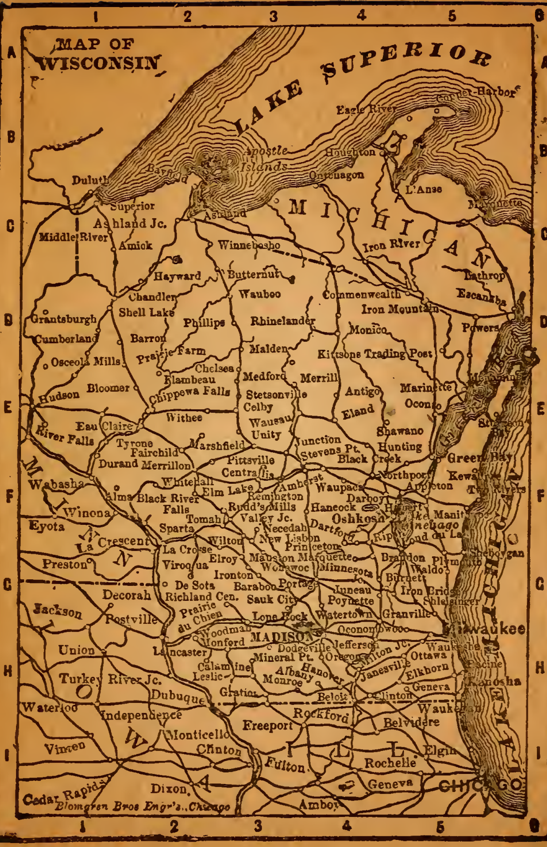
IDAHO
Swan Lake
Franklin
Richmond
Logan
Randolph
CACHE
RICH
Box Elder
Corinne
WEBER
Kelton
Matlin
Terrace
Blue Cr.
Bovine
Lucin
BOX ELDER
Great Salt Lake
Ogden City
Morgan
MORGAN
Echo
Farmington
Echo Cy.
Coalville
Granger
SUMMIT
Browns Park
White Rock
Ashley
SALT LAKE CY.
SALT LAKE
Park City
West Jordan
Bingham
Tooele
Lehi City
Heber
Utah Lake
GREAT AMERICAN DESERT
TOOELE
Provo City
WASATCH
Fairfield
UTAH
Spanish Forks
Eureka
Payson
Thistle
Mona
Mill Fork
Ouray
Silver City
Indianola
Tintic
Nephi
JUAB
Pleasant Val. Jc.
Castle Gate
UINTAH
Green
Leamington
Scofield
Price
Riverside
Sunny Side
Utah Line
SANPETE
Manti
Grassy Trail
Deseeret
Castle Dale
Neels
Helen
MILLARD
EMERY
Blake
Cottonwood
Salina
Black Rock Spring
Fillmore Cy.
SEVIER
Muddy
Salcratus Spring
Joseph
Richfield
Burrville
Frisco
Greenwich
Fremont
Milford
BEAVER
Thurber
UTE
La Sal
Mineraville
Beaver
Junction
River
Coyote
Paragonah
Tebbsdale
IRON
GARFIELD
SAN JUAN
Parowan
Escalante
Colorado
Cedar City
Panguitch
Hebron
Pine Valley
Kanarraville
WASHINGTON
Glendale
Pahreah
KANE
Montezuma
Bluff
St. George
Mt. Carmel
St. Elmo
COLORADO
NEVADA
Lee's Ferry
ARIZONA
Cave Dwellings



MAP OF VIRGINIA & WEST VIRGINIA

Blomgren Bros. Engr's, Chicago


MAP OF WASHINGTON
PACIFIC OCEAN
VANCOUVER ISLAND
BRITISH COLUMBIA
IDAHO
OREGON
OLYMPIA
Victoria
Friday Harbor
Port Townsend
Port Angeles
Port Gamble
Seattle
Tacoma
Lynden
Whatcom
Sterling
Skagit
Snohomish
Coal City
Newcastle
Orting
Olympia
Tenino
Chehalis
Montesano
Oysterville
Ilwaco
Astoria
St. Helen
Vancouver
Kalama
Cowlitz
Portland
Hillsborough
La Fayette
Oregon City
The Dalles
Wapinitia
Goldendale
Wildcat
Cascades
YAKIMA INDIAN RESERVATION
Fort Simcoe
Yakima
Ellensburg
Wenas
Milton
Peoha-tin
Camp Chelan
Lake Chelan
Columbia
MOSES RESERVATION
Fort Okinakane
COLEVILLE INDIAN RESERVATION
Port Colville
Brent
Ft. Spokane
Walker's Prairie
Spokane Falls
Cheney
Clifton
Sprague
Medical Lake
Bedalis
Alkali Lakes
Moses Lake
Twin Wells
Bluff Well
White Bluffs
Ainsworth
South Ainsworth
Wallula
Umatilla
Castle Rock
Willow Forks
Eltopia
Prescott
Riparia
Perry
Endicott
Sutton
Colfax
Pine Creek
Lone Pine
Dayton
Pomeroy
Alpowa
Walla Walla
Dixon
Touchet
Waitsburg
Snake River
Blalock
Umatilla
Bismarck
Blomgren Bros. Engr's Chicago


MAP OF WISCONSIN
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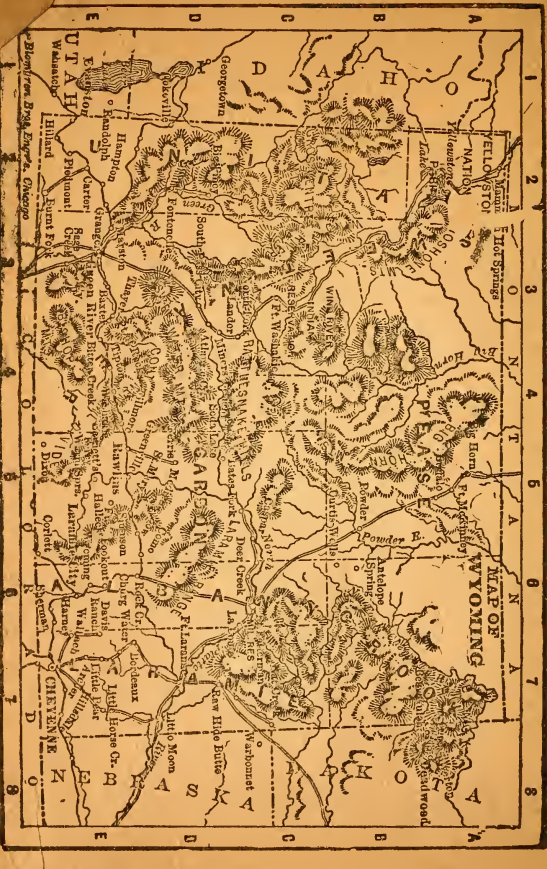
I
LAKE SUPERIOR
MICHIGAN
Apostle Islands
Bayfield
Duluth
Superior
Ashland
Ashland Jc.
Middle River
Amick
Eagle River
Copper Harbor
Houghton
Ontonagon
L'Anse
Marquette
Winnebosho
Iron River
Hayward
Butternut
Chandler
Wauboo
Lathrop
Escanaba
Commenwealth
Iron Mountain
Grantsburgh
Shell Lake
Phillips
Rhinelander
Cumberland
Barron
Monico
Powers
Prairie Farm
Malden
Kittsons Trading Post
Osceola Mills
Chelsea
Flambeau
Medford
Merrill
Menominee
Hudson
Bloomer
Chippewa Falls
Stetsonville
Antigo
Marinette
Colby
Oconto
Withee
Eland
River Falls
Eau Claire
Wausau
Sturgeon Bay
Shawano
Unity
Tyrone
Fairchild
Marshfield
Junction
Stevens Pt.
Hunting
Green Bay
Durand
Merrillon
Pittsville
Black Creek
Centralia
Kewaunee
Northport
Wabasha
Whitehall
Amherst
Appleton
Elm Lake
Remington
Waupaca
Two Rivers
Alma
Black River Falls
Rudd's Mills
Hancock
Darboy
Winona
Tomah
Valley Jc.
Oshkosh
Hebert
Lake Winnebago
Manitowoc
Eyota
Sparta
Necedah
Dartford
Crescent
La Crescent
New Lisbon
Ripon
Fond du Lac
Wilton
Princeton
La Crosse
Sheboygan
Preston
Elroy
Mauston
Marquette
Brandon
Plymouth
Viroqua
Woonawoc
Minnesota Jc.
Waldo
MINN.
Ironton
Portage
Burnett
De Sota
Baraboo
Juneau
Iron Bridge
Decorah
Richland Cen.
Sauk City
Poynette
Schlesinger
Jackson
Prairie du Chien
Lone Rock
Watertown
Granville
Postville
Woodman
Oconomowoc
Milwaukee
Monford
MADISON
Union
Dodgeville
Jefferson
Waukesha
Lancaster
Mineral Pt.
Oregon
Milton Jc.
Ottawa
Racine
Calamine
Leslie
Albany
Hanover
Janesville
Elkhorn
Turkey River Jc.
Monroe
Kenosha
Gratiot
Geneva
Dubuque
Beloit
Clinton
Waterloo
Rockford
Waukegan
Independence
IOWA
Freeport
Belvidere
Monticello
Vinton
Clinton
ILL.
Elgin
Fulton
Rochelle
Cedar Rapids
Dixon
Geneva
CHICAGO
Amboy
Blomgren Bros Engr's., Chicago


MAP OF
WYOMING
IDAHO
MONTANA
DAKOTA
NEBRASKA
COLORADO
UTAH
YELLOWSTONE NATIONAL PARK
Yellowstone Lake
Mamm. Hot Springs
SHOSHONE MTS
WIND RIVER INDIAN RESERVATION
Ft. Washakie
Lander
RATTLESNAKE HILLS
BIG HORN MTS.
Big Horn
Buffalo
Ft. McKinney
Powder R.
Powder
Curtis Wells
Antelope Spring
Deadwood
Warbonnet
Raw Hide Butte
Little Moon
Little Horse Cr.
Little Bear
Bordeaux
Ft. Laramie
Chug Water
Rock Cr.
Davis Ranch
Wallbach
Harney
Sherman
CHEYENNE
Laramie City
Wyoming
Lookout
Rawlins
Fillmore
Tipton
Green River
Bitter Creek
Baxter
Granger
Evanston
Randolph
Hampton
Hilliard
Wahsatch
Piedmont
Carter
Burnt Fork
Cokeville
Georgetown
Fontonelle
South Pass City
Atlantic City
Deer Creek
Dixon
Corlett
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Blomgren Bros. Engr's. Chicago

FIVE PER CENT. INTEREST TABLE.

		$1	$2	$3	$4	$5	$10	$20	$30	$40	$50	$60	$70	$80	$90	$100	$200	$500	$1,000
DAYS.	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	3	7	14
	2	0	0	0	0	0	0	1	1	1	1	2	2	2	3	3	6	14	28
	3	0	0	0	0	0	0	1	1	2	2	3	3	3	4	4	8	21	42
	4	0	0	0	0	0	1	1	2	2	3	3	4	4	5	6	11	28	56
	5	0	0	0	0	0	1	1	2	3	3	4	5	6	6	7	14	35	69
	6	0	0	0	0	0	1	2	3	3	4	5	6	7	8	8	17	42	83
	7	0	0	0	0	0	1	2	3	4	5	6	7	8	9	10	19	49	97
	8	0	0	0	0	1	1	2	3	4	6	7	8	9	10	11	22	56	1.11
	9	0	0	0	1	1	1	3	4	5	6	8	9	10	11	13	25	63	1.25
	10	0	0	0	1	1	1	3	4	6	7	8	10	11	13	14	28	69	1.39
	15	0	0	1	1	1	2	4	6	8	10	13	15	17	19	21	42	1.04	2.08
	20	0	1	1	1	1	3	6	8	11	14	17	19	22	25	28	56	1.39	2.78
	25	0	1	1	1	2	3	7	10	14	17	21	24	28	31	35	69	1.74	3.47
	30	0	1	1	2	2	4	8	13	17	21	25	29	33	38	42	83	2.08	4.17
	33	0	1	1	2	2	4	9	14	19	23	28	32	36	42	46	91	2.29	4.59
	63	1	2	3	3	4	8	18	26	35	44	53	61	70	79	87	1.75	4.38	8.75
	93	1	3	4	5	6	13	26	39	52	65	78	91	1.03	1.17	1.29	2.58	6.46	12.92
MONTHS.	1	0	1	1	2	2	4	8	13	17	21	25	29	33	38	42	83	2.08	4.17
	2	1	2	3	3	4	8	17	25	33	42	50	58	67	75	83	1.67	4.17	8.33
	3	1	3	4	5	6	13	25	38	50	63	75	88	1.00	1.13	1.25	2.50	6.25	12.50
	4	2	3	5	7	8	17	33	50	67	83	1.00	1.17	1.33	1.50	1.67	3.33	8.33	16.67
	5	2	4	6	8	10	21	42	63	83	1.04	1.25	1.46	1.67	1.88	2.08	4.17	10.42	20.83
	6	3	5	8	10	13	25	50	75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	5.00	12.50	25.00
	7	3	6	9	12	15	29	58	88	1.17	1.46	1.75	2.04	2.33	2.63	2.92	5.83	14.58	29.17
	8	3	7	10	13	17	33	67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33	6.67	16.67	33.33
	9	4	8	11	15	19	38	75	1.13	1.50	1.88	2.25	2.63	3.00	3.38	3.75	7.50	18.75	37.50
	10	4	8	13	17	21	42	83	1.25	1.67	2.08	2.50	2.92	3.33	3.75	4.17	8.33	20.83	41.67
	11	5	9	14	18	23	46	92	1.38	1.83	2.29	2.75	3.21	3.67	4.13	4.58	9.17	22.92	45.83
	12	5	10	15	20	25	50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	10.00	25.00	50.00

SIX PER CENT. INTEREST TABLE.

	$1	$2	$3	$4	$5	$10	$20	$30	$40	$50	$60	$70	$80	$90	$100	$200	$500	$1,000
DAYS.																		
1	0	0	0	0	0	0	0	1	1	1	1	1	1	2	2	3	8	17
2	0	0	0	0	0	0	1	1	1	2	2	2	3	3	3	7	17	33
3	0	0	0	0	0	1	1	2	2	3	3	4	4	5	5	10	25	50
4	0	0	0	0	0	1	1	2	3	3	4	5	5	6	7	13	33	67
5	0	0	0	0	0	1	2	3	3	4	5	6	7	8	8	17	42	83
6	0	0	0	0	1	1	2	3	4	5	6	7	8	9	10	20	50	1.00
7	0	0	0	0	1	1	2	4	5	6	7	8	9	11	12	23	58	1.17
8	0	0	0	1	1	1	3	4	5	7	8	9	11	12	13	27	67	1.33
9	0	0	0	1	1	2	3	5	6	8	9	11	12	14	15	30	75	1.50
10	0	0	1	1	1	2	3	5	7	8	10	12	13	15	17	33	83	1.67
15	0	1	1	1	1	3	5	8	10	13	15	18	20	23	25	50	1.25	2.50
20	0	1	1	1	2	3	7	10	13	17	20	23	27	30	33	67	1.67	3.33
25	0	1	1	2	2	4	8	13	17	21	25	29	33	38	42	83	2.08	4.17
30	1	1	2	2	3	5	10	15	20	25	30	35	40	45	50	1.00	2.50	5.00
33	1	1	2	2	3	6	11	17	22	28	33	39	44	50	55	1.10	2.75	5.50
63	1	2	3	4	5	11	21	32	42	53	63	74	84	95	1.05	2.10	5.25	10.50
93	2	3	5	6	8	16	31	47	62	78	93	1.09	1.24	1.40	1.55	3.10	7.75	15.50
MONTHS.																		
1	1	1	2	2	3	5	10	15	20	25	30	35	40	45	50	1.00	2.50	5.00
2	1	2	3	4	5	10	20	30	40	50	60	70	80	90	1.00	2.00	5.00	10.00
3	2	3	5	6	8	15	30	45	60	75	90	1.05	1.20	1.35	1.50	3.00	7.50	15.00
4	2	4	6	8	10	20	40	60	80	1.00	1.20	1.40	1.60	1.80	2.00	4.00	10.00	20.00
5	3	5	8	10	13	25	50	75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	5.00	12.50	25.00
6	3	6	9	12	15	30	60	90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	6.00	15.00	30.00
7	4	7	11	14	18	35	70	1.05	1.40	1.75	2.10	2.45	2.80	3.15	3.50	7.00	17.50	35.00
8	4	8	12	16	20	40	80	1.20	1.60	2.00	2.40	2.80	3.20	3.60	4.00	8.00	20.00	40.00
9	5	9	14	18	23	45	90	1.35	1.80	2.25	2.70	3.15	3.60	4.05	4.50	9.00	22.50	45.00
10	5	10	15	20	25	50	1.09	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	10.00	25.00	50.00
11	6	11	17	22	28	55	1.10	1.65	2.20	2.75	3.30	3.85	4.40	4.95	5.50	11.00	27.50	55.00
12	6	12	18	24	30	60	1.20	1.80	2.40	3.00	3.60	4.20	4.80	5.40	6.00	12.00	30.00	60.00